



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

**TECHNICAL SUPPORT DOCUMENT  
FOR:  
TESORO REFINING & MARKETING  
COMPANY LLC,  
ANACORTES REFINERY  
CLEAN PRODUCTS UPGRADE PROJECT**

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**July 18, 2017**

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## 1. EXECUTIVE SUMMARY

Tesoro Refining & Marketing Company LLC operates a Refinery in Anacortes, Washington, referred to as the Anacortes Refinery. The Tesoro Anacortes Refinery (Tesoro) produces petroleum based products.

This Prevention of Significant Deterioration (PSD) project referred to as the Clean Products Upgrade Project (CPUP or project), will make the following changes to the refinery:

- Add equipment capable of producing a product used to make clothing, film for medical x-rays, plastics, cleaners, and many other products.
- Install a new Marine Vapor Emission Control (MVEC) System that will reduce emissions of volatile organic compound (VOC) air pollutants.
- Expand existing equipment that will allow Tesoro to further reduce the sulfur content in gasoline as required by new federal fuel regulations.
- Install new equipment to increase the amount of octane available to be used in fuels.

All of these modifications will meet air quality regulations as part of this PSD permit.

The Washington State Department of Ecology (Ecology) received the initial PSD application on August 10, 2015, and the application fee on August 13, 2015. Tesoro provided a revised application on April 21, 2016. Tesoro submitted supplemental material to Ecology on May 17, 2016, and Ecology determined Tesoro's application to be complete on May 17, 2016. Tesoro provided a consolidated application in June 2016. On January 10, 2017 Tesoro provided a clarification to the figure 1 flow diagram.

## 2. INTRODUCTION

### 2.1. The Permitting Process

#### 2.1.1. The PSD process

PSD permitting requirements in Washington State are established in Title 40, Code of Federal Regulations (CFR) 52.21; Washington Administrative Code (WAC) 173-400-700 through 750. Washington State implements its PSD program as a State Implementation Plan (SIP)-approved program. This SIP-approved program became effective May 29, 2015.<sup>1</sup>

Federal and state rules require PSD review of all new or modified air pollution sources that meet certain criteria in an attainment or unclassifiable area with the NAAQS. The objective of the PSD program is to prevent significant adverse environmental impact from emissions into the atmosphere by a proposed new major source, or major modification to an existing major source. The program limits degradation of air quality to that which is not considered "significant."

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<sup>1</sup> 80 FR 23721, April 29, 2015.

Under WAC 173-400-720 through 750, a project proposed at an existing major stationary source is subject to PSD review if the project either is a “major modification” to an existing “major stationary source,” or is a major stationary source unto itself.

To be considered a major modification, the following three project aspects are considered: physical or operational changes resulting from the project, project emissions compared with significant emission rates (SER), and significant net emission increases (and/or decreases).

Unless a physical change or change in the method of operation of a major stationary source is exempted by applicable regulation 40 CFR 52.21(b)(2)(iii)(a through k), it is a major modification if the change results in both a significant emissions increase and a significant net emissions increase at the source. “Significant emissions increase” means that the emissions increase for any regulated PSD pollutant is greater than the PSD SER threshold for that regulated pollutant.

This project will have physical or operational change consistent with the definition of “major modification” in 40 CFR 52.21(b)(2)(i). In addition, estimated project emissions are above the PSD SER thresholds both before and after considering significant net emission increases and/or decreases associated with the project for each of the following pollutants: particulate matter (PM) less than 10 microns (PM<sub>10</sub>), PM less than 2.5 microns (PM<sub>2.5</sub>), and greenhouse gases (CO<sub>2e</sub>).

PSD rules are designed to keep an area with “good” air in compliance with the NAAQS. The distinctive requirements of PSD are Best Available Control Technology (BACT), air quality analysis (allowable increments and comparison with the National Ambient Air Quality Standards (NAAQS)), and analysis of impacts of the project on visibility, vegetation, and soils.

PSD rules require the utilization of BACT for certain new or modified emission units, which is the most effective air pollution control equipment and procedures that are determined to be available after considering environmental, economic, and energy factors.

A full technical review of the project for these pollutants, including a (BACT) analysis, and the project’s effect on NAAQS, PSD increments, visibility, soils and vegetation, is required and included in this Technical Support Document (TSD).

The emissions of other air pollutants not subjected to PSD review are covered in the Northwest Clean Air Agency’s (NWCAA) Notice of Construction (NOC) approval for this project

A summary of project component descriptions is provided in Section 2.2.2., with a more detailed PSD review process description for this project provided in Section 3. BACT information for this project is included in Section 4. An ambient impact analysis is presented in Section 5 and an additional growth impact analysis is presented in Section 6. These sections form the basis of the permit approval conditions.

### **2.1.2. The NOC process**

This project is subject to NOC permitting requirements under state of Washington regulations Chapters 173-400 and 173-460 (and/or local air regulations where applicable). NWCAA is the permitting authority for air pollutants not included in PSD permitting. This includes the New Source Review (NSR) permitting of criteria pollutants that are not PSD-applicable, air toxics issues under federal maximum achievable control technology (MACT) and state 173-460 WAC, and Title V permitting requirements. The procedure for issuing an NOC permit was established in Chapter 70.94 RCW.

WAC 173-400-110 outlines the NSR procedures for permitting criteria pollutants. These procedures are further refined in WAC 173-400-113 (requirements for new sources located in attainment or unclassifiable areas) and/or local air requirements where applicable. WAC 173-460-040 NSR supplements the requirements contained in Chapter 173-400 WAC (and/or local air requirements where applicable) by adding additional requirements for sources of toxic air pollutants (TAPs).

## **2.2. Site and Project Description**

### **2.2.1. Site description**

The Tesoro site facility is located in a Class II area that is designated as “attainment or unclassifiable” for the purpose of PSD permitting for all pollutants.

### **2.2.2. Project description**

The proposed project will not increase the current footprint acreage of the site. The refinery produces petroleum based fuels.

The project will make the following changes to the refinery:

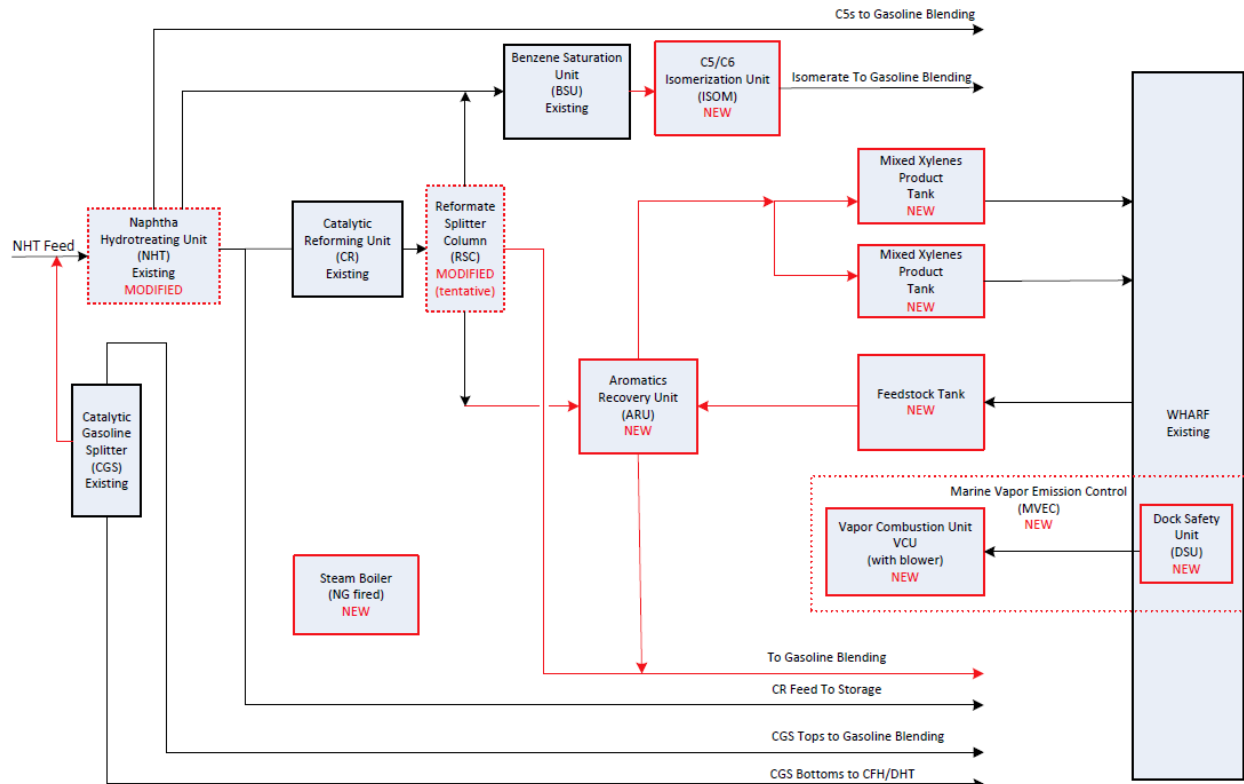
- Build an Aromatics Recovery Unit (ARU) capable of producing 15,000 barrels per day of mixed xylenes, a feedstock used to make clothing, film for medical x-rays, plastics, cleaners and many other products we use every day.
- Install a new MVEC System that will reduce emissions of VOCs. The MVEC System will control hydrocarbon emissions from marine vessels during loading operations.
- Expand the Naphtha Hydrotreater (NHT) to process 46,000 barrels of naphtha per day. This will allow Tesoro to further reduce the sulfur content in gasoline as required by the new federal Tier 3 regulations.
- Install a new Isomerization (Isom) unit to increase the amount of octane available to the refinery. Coupled with the NHT expansion project, this provides more flexibility for production of gasoline.

According to the application: “the affected non-modified process units are the Catalytic Reformer (CR) and Catalytically Cracked Gasoline Splitter (CGS), as well as specific [existing] storage tanks.” A summary of all emission units affected by the project are listed in Table 1.

<b>Table 1. Summary of Emission Units Affected by the CPUP</b>	
<b>Equipment Unit</b>	<b>New/Existing Unit (Change in Utilization)</b>
Natural gas-fired steam boiler (F-6870)	New
Reformat Feedstock Tank 285	New
Mixed Xylenes Product Tank 286	New
Mixed Xylenes Product Tank 287	New
MVEC System	New
Fugitive Equipment at Isom Unit	New
Fugitive Equipment at ARU	New
Fugitive Equipment at ARU Tankage	New
Fugitive Equipment at CR/NHT	New
Fugitive Equipment at MVEC	New
NHT Feed Heater (F-6600)	Existing unit (change in utilization)
NHT Stabilizer Column Reboiler (F-6601)	Existing unit (change in utilization)
CR Feed Heater (F-6650)	Existing unit (change in utilization)
CR Inter-reactor Heater 1 (F-6651)	Existing unit (change in utilization)
CR Inter-reactor Heater 2 (F-6652)	Existing unit (change in utilization)
CR Inter-reactor Heater 3 (F-6653)	Existing unit (change in utilization)
CR Column Heater (F-6654)	Existing unit (change in utilization)
CR Regeneration Heater (F-6655)	Existing unit (change in utilization)
RSC Reboiler (F-6602)	Existing unit (change in utilization)
Existing Storage Tank 13	Existing unit (change in utilization)
Existing Storage Tank 14	Existing unit (change in utilization)
Existing Storage Tank 17	Existing unit (change in utilization)
Existing Storage Tank 231	Existing unit (change in utilization)

The following figure from the application shows a high level process flow diagram of the CPUP. A more detailed description of the project major components is provided in the following subsections.





**Figure 1. High level process flow diagram of project (new processes, equipment, and flows shown in red)**  
(Source: Tesoro CPUP application, prepared by Barr Engineering Company, dated June 2016)

#### 2.2.2.1. New aromatic recovery unit

The new aromatic recovery unit (ARU) will be located downstream of the existing catalytic reforming (CR) unit. The following excerpts from the Tesoro PSD application prepared by Barr Engineering Company (Barr) describe the ARU:

The ARU “will process heavy reformate from the CR, as well as a medium reformate that will be imported from external sources. The heavy reformate consists of several gasoline-range chemical compounds that includes mixed xylenes. The ARU will use both distillation and extractive distillation with Sulfolane solvent to produce a mixed xylenes product that meets commercial specification for petrochemical feedstock and will also produce a byproduct used for gasoline fuel blending. The proposed ARU will be designed to produce up to 15,000 barrels per day of the mixed xylenes product, which will be sold on the global petrochemical market primarily for polyester manufacturing.

“The imported medium reformate feedstock from external sources will be unloaded and the mixed xylenes product will be loaded using the existing refinery wharf system. The loading and

unloading operations will use existing piping. The medium reformate feedstock and mixed xylenes product will be stored in new storage tanks that will be constructed adjacent to the existing tankage area of the refinery. The new storage tanks consist of two mixed xylenes product storage tanks and one medium reformate feedstock storage tank. The new product storage tanks will have a gross volume of 193,000 barrels (TK-287) and 384,000 barrels (TK-286), respectively, and the feedstock tank (TK-285) will have a gross volume of 384,000 barrels. The new storage tanks will each be equipped with a floating roof with primary and secondary seals to control hydrocarbon emissions.

“A new, natural gas-fired steam boiler (F-6870) will be installed to provide the process steam needed for the Project. The new steam boiler will be equipped with a combination of low NO<sub>x</sub> burners and Selective Catalytic Reduction (SCR) to control NO<sub>x</sub> emissions and Catalytic Oxidation to control CO emissions. The distillation columns in the ARU will have miscellaneous process vents that will be routed to either the firebox of the new boiler or to the fuel gas system via the flare gas header. New emissions units associated with the ARU Unit will include F-6870, new storage tanks TK-285, TK-286, and TK-287, and new component equipment in VOC/TAP service.”

#### **2.2.2.2. MVEC system installation**

The following excerpts from the Tesoro PSD application prepared by Barr describe the MVEC:

“Displaced vapors associated with new refinery loading activities of mixed xylenes product, in addition to vapors from existing gasoline-range materials and crude oil loading operations, will be routed to a new MVEC System to control hydrocarbons emissions, which are regulated as VOCs. The displaced marine vessel vapors will be collected by vapor hoses and routed to a Dock Safety Unit (DSU) that will be stationed on the wharf structure. The DSU is an essential piece of the overall MVEC System to ensure the safety for the ships, vessels and the overall MVEC System. Included in those safety requirements is a new 3” natural gas supply line to the DSU to supply enrichment gas for non-inerted vessels, supplied via an existing natural gas source from within the refinery. The vapors exiting the DSU will be routed through an existing line available on the wharf/causeway structure, to the new Vapor Combustion Unit (VCU) located in the refinery. Natural gas will also be added as support gas to assist combustion in the VCU during loading of inerted vessels.

“The MVEC installation will result in a significant decrease in VOC emissions from the existing marine loading operations. Combustion of the collected vapors and natural gas support/enrichment gases will result in emissions of other criteria pollutants. The Project will include modification and addition of equipment in VOC/TAP service.”

### **2.2.2.3. Naphtha Hydrotreater (NHT) Expansion Project**

The following excerpts from the Tesoro PSD application prepared by Barr describe the NHT: “Tesoro operates an existing naphtha hydrotreater that uses hydrogen and a fixed bed catalyst to remove contaminants, such as sulfur, from the naphtha that is produced from upstream processing units. In particular, the naphtha feed is mixed with hydrogen and is heated by a furnace (F-6600) and by heat exchange with the reactor effluent prior to entering the NHT reactor. The NHT reactor is filled with a catalyst that promotes several reactions in which the hydrogen and sulfur react to create hydrogen sulfide and nitrogen combines with hydrogen to form ammonia. The product streams from the NHT include process gas, light gasoline to gasoline blending, and feed to the downstream Benzene Saturation Unit (BSU) and Catalytic Reformer (CR).

“The purpose of the NHT expansion project is to meet Tier 3 gasoline sulfur standards. Because the NHT is a critical process unit for producing low sulfur gasoline, the most effective way to reduce the sulfur content of the gasoline is to hydrotreat more of the existing refinery Catalytic Cracking Unit (CCU) gasoline that is not currently hydrotreated by changing the operational cutpoints at the Catalytically Cracked Gasoline Splitter (CGS); the side-cut to the NHT will be increased and the top draw will be decreased. Therefore, Tesoro proposes to increase the processing capacity from 40,000 barrels per day to 46,000 barrels per day at the NHT by hydrotreating more of the existing CCU Gasoline. This capacity increase will be accomplished by replacing the existing hydrotreating reactor, replacement and addition of other equipment such as pumps, vessels, and heat exchangers, and modifications to distillation columns. The existing hydrotreating reactor will be replaced with a larger reactor allowing for higher catalyst volume, resulting in reduced catalyst degradation and therefore longer catalyst life. The additional treated product from the NHT will provide additional feed to the CR and BSU.

“The Project will include modification and addition of component equipment in VOC/HAP service. Process throughput rates are expected to increase at the NHT as a result of the Project. The affected emissions units at the NHT include the NHT feed heater (F-6600) and NHT Stabilizer column reboiler furnace (F-6601). Tesoro plans to improve the energy efficiency of the NHT to maintain firing rates at F-6600 and F-6601 near historical levels.... The new proposed steam boiler, will be designed to accommodate a small steam demand increase anticipated at the NHT.”

### **2.2.2.4. New isomerization process unit**

The following excerpts from the Tesoro PSD application prepared by Barr describe the new Isom:

“Tesoro proposes to install a C5/C6 Isomerization (Isom) Unit that will be integrated as part of the Benzene Saturation Unit (BSU), located adjacent to the existing BSU equipment. The BSU processes light naphtha from the overhead of the NHT’s dehexanizer column and light benzene-rich reformat from the overhead of the CR’s Reformat Splitter Column to catalytically hydrogenate the benzene into cyclohexane. The liquid product from the BSU reactor will feed

the Isom Unit. Perchloroethylene, a chemical already used within the refinery, will be stored in a new tank within the Isom Unit and injected into the process to promote the reaction to produce isomerate. Isomerate is a low sulfur, low benzene, relatively high octane gasoline blending component that will allow the refinery to economically meet the new Tier 3 clean fuel standards.

“Emissions changes from the Isom Unit will be a result of increased steam usage needed to operate the unit, and additional component equipment (e.g. pumps, valves, flanges, etc.). Configuration changes are required to integrate the existing BSU with the Isom Unit, which includes but is not limited to re-aligning the existing stabilization column to the end of the Isom Unit.... The new proposed steam boiler.... will be designed to accommodate the anticipated steam demand increase from the Isom Unit.”

#### **2.2.2.5. Reformate splitter column**

The existing reformate splitter column (RSC) will be affected by the CPU project. The following excerpts from the Tesoro PSD application prepared by Barr describe the affected RSC unit:

“The reformate product from the CR is currently split in the RSC into heavy reformate and light reformate streams. Tesoro proposes to install a new side-draw stream to extract the range of hydrocarbons referred to as the C7 stream (hydrocarbons with seven carbon molecules). The C7 stream will then be blended directly into gasoline product. The change will include modification and addition of component equipment in VOC/HAP service. While process throughput rates are not expected to increase at the RSC, an increase in the utilization rate will increase at the affected emission unit, the RSC Reboiler (F-6602).”

#### **2.2.2.6. Catalytic reformer**

The existing catalytic reformer (CR) will be affected by the CPU project. The following excerpts from the Tesoro PSD application prepared by Barr describe the affected CR unit:

“The catalytic reforming unit uses fixed-bed catalytic reactors to increase the octane rating of its gasoline range feed. The reformate product is currently split in the Reformate Splitter Column (RSC) into heavy reformate and light reformate streams. The light reformate is fed to the BSU, while the heavy reformate is currently sent to gasoline component storage for use in gasoline fuel blending. The heavy reformate will become the feed to the ARU as a result of this [CPU] Project and a new C7 side-cut will be directed to gasoline fuel blending. The Project does not involve any physical changes or changes in the processing capacity of the CR. However, increased rates at the NHT are expected to result in an increased utilization of the CR. The affected emission units are the CR process heaters (F-6650, F-6651, F-6652, F-6653, F-6654, and F-6655).”

#### **2.2.2.7. Catalytically cracked gasoline splitter**

The existing catalytically cracked gasoline splitter (CGS) will be affected by the CPU project. The following excerpts from the Tesoro PSD application prepared by Barr describe the affected CGS unit:

“The CGS separates the CCU Gasoline into light, middle and heavy fractions. The light fraction is treated with caustic and directed to storage or gasoline blending; the middle fraction is fed to the NHT; and the heavy fraction is fed to the Clean Fuels Hydrotreater (CFH)... Tesoro proposes to decrease the production rate of the light fraction and increase the production rate of the middle fraction. As a result of reducing the overall top draw (light fraction), Tesoro expects that the CGS Column Reboiler (F-104) will require less firing; therefore, no emissions increase is expected at the CGS, and F-104 is not an affected emissions unit.”

#### **2.2.2.8. Existing storage tanks**

Existing storage tanks 13, 14, 17, and 231 are used to store feedstocks, intermediates, and products at the refinery. Tesoro has determined that material vapor pressure and/or throughput may increase at Tanks 13, 4, 17, and 231 as a result of the Project. These tanks are considered non-modified affected emission units.

### **3. PSD APPLICABILITY REVIEW**

#### **3.1. Overview and Permitting History**

As noted in Section 2.2.1, the proposed project will require a PSD permit because both the project's emissions increase and the net contemporaneous emissions increase caused by the project exceed PSD SERs for NSR pollutants, including greenhouse gases (GHGs). This section describes how the PSD applicability determination was performed.

The proposed project at Tesoro requires PSD review. In accordance with the requirements of 40 CFR 52.21(a)(2), these emission increases associated with the new and existing units is based on their potential to emit (PTE) or projected actual emissions and baseline actual emissions (BAE).

After determining in Section 2.1.1. that there are no physical and operational changes of this project exempted by 40 CFR 52.21(b)(2)(iii)(a through k), (Step 1), the significant emissions increase analysis looks only at the emissions from the proposed project and is referred to here as Step 2. The significant net emissions increase analysis looks at additional increases and decreases from “contemporaneous” projects at the source and is referred to here as Step 3.

For the significant emissions increase analysis, the review involves both new emissions units and modification of existing units. The PSD regulations require use of the hybrid test for projects that involve both the addition of new emissions units and the modification of existing emissions units (40 CFR 52.21(a)(2)(iv)(f)). Under the hybrid test, a significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the emissions increases for each

emissions unit, using the actual-to-projected-actual applicability test (40 CFR 52.21(a)(2)(iv)(c)) for modified units and the actual-to-potential applicability test (40 CFR 52.21(a)(2)(iv)(d)) for new units, equals or exceeds the significance threshold for that pollutant as defined in paragraph 40 CFR 52.21(b)(23).

The actual-to-projected-actual applicability test involves adding the projected actual emissions from existing emissions units that are modified as part of the project or that are otherwise expected to experience an emission increase as a result of the project, and then subtracting the past actual emissions (called the “baseline actual emissions”) from those units.

In lieu of projecting future actual emissions for a particular existing emissions unit, an applicant can choose instead to use the unit’s PTE as the unit’s post project emissions (40 CFR 52.21(b)(41)(ii)(d)). The actual-to-potential test, which is required for all new units being constructed as part of the project, involves totaling the potential emissions of the proposed new emissions units, then subtracting baseline actual emissions of those units. A new unit that is being constructed as part of the project has a baseline actual emission rate of zero (40 CFR 52.21(b)(48)(iii)).

If the project would result in a significant emissions increase, then a significant net emissions increase analysis is often conducted. However, EPA has clearly stated that calculating a net emissions increase is at the source’s option (see, for example, 67, Federal Register 80186, at 80197 [December 31, 2002]). Therefore, a source may seek a PSD permit based on a calculated significant emission increase alone. For the CPUP, which is an existing major source for PSD, Tesoro found that emissions for three (4) regulated NSR pollutants were considered to have significant emissions increases. Tesoro also performed a netting analysis for VOC, which netting out of PSD, (see sections 3.3.1 and 3.3.2). As a results of the netting analysis, only three pollutants had significant net emissions increases.

The CPUP, therefore, triggers PSD review for the three regulated NSR pollutants.

### **3.2. Significant Emissions Increases Calculation**

The project will involve both modifying existing emission units and constructing new emission units. Therefore, the hybrid test, described in the previous section, is required. Test results for both new and modified units are presented in this section followed by a summary hybrid test table.

#### **3.2.1. Actual-to-potential test for new project units**

For new units, Tesoro calculated potential emissions for the new units and assumed baseline actual emissions are zero.

The calculations for new boiler emissions were based the BACT limit emission rates listed in Section 4.2, and the following parameters:

- Maximum heat input (vendor): 584 MMBtu/hr
- (calculated): 572.55 Mscf/hr; 5,115,840 MMBtu/yr; 5,015,529 Mscf/yr
- Hours of operation: 8760 hr/yr
- Average NG heat content: 1020 BTU/scf
- Exhaust gas volume flow 143,186 acfm

The results of the new boiler emission calculations are listed in Table 2.

<b>Table 2. Emission Increases of Regulated NSR Pollutants for New Boiler (tpy)</b>											
<b>Emissions</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>H<sub>2</sub>SO<sub>4</sub></b>	<b>VOC</b>	<b>CO<sub>2e</sub></b>	<b>H<sub>2</sub>S</b>	<b>Pb</b>
PTE	18.9	27.9	19.2	19.2	19.2	6.4	(a)	14.1	299,524	(a)	(a)
(a) Zero, negligible, or not applicable.											

The calculations for new feedstock Tank 285 and mixed xylenes product Tanks 286 and 287 emissions were based on the highest estimated potential VOC emissions, which results from assuming gasoline stored in the tanks. The VOC emissions from the new storage tank were calculated with TankESP software.

The results of the new tank emission calculations are listed in Table 3.

[illegible]

Emissions	CO	NO <sub>x</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	H <sub>2</sub> SO <sub>4</sub>	VOC	CO <sub>2</sub> e	H <sub>2</sub> S	Pb
ARU	*	*	*	*	*	*	*	1.4	36	*	*
ARU tankage	*	*	*	*	*	*	*	0.2	4	*	*

\* Zero, negligible, or not applicable.



### **3.2.1.6. Actual-to-potential test for new fugitive equipment at CR/NHT**

The potential emissions for the new fugitive equipment at CR and NHT are listed in Table 7.

<b>Table 7. Emissions Increases of Regulated NSR Pollutants for ARU (tpy)</b>											
<b>Emissions</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>H<sub>2</sub>SO<sub>4</sub></b>	<b>VOC</b>	<b>CO<sub>2e</sub></b>	<b>H<sub>2</sub>S</b>	<b>Pb</b>
PTE	*	*	*	*	*	*	*	5.5	137	*	*
* Zero, negligible, or not applicable.											

### **3.2.2. Actual-to-projected-actual applicability test for modified, debottlenecked, or other affected emissions units**

Debottlenecking is the term used for situations when emission units upstream or downstream from the unit(s) undergoing a physical change or change in the method of operation will experience an emission increase as result of the project.

Other affected emissions units could experience increased utilization due to the project. Tesoro has determined that certain emission units upstream or downstream from the unit(s) undergoing a physical change or change in the method of operation will experience increased utilization as result of the project. Additional emissions from units with increased utilization are calculated using an actual-to-projected-actual applicability test.

As described in Section 3.1, the actual-to-projected-actual applicability test involves adding the projected actual emissions from existing emissions that are expected to experience an emission increase as a result of the project, and then subtracting the past actual emissions (called the “baseline actual emissions”) from those units.

When calculating projected actual emissions, 40 CFR 52.21(b)(41)(ii)(c) requires that Tesoro: “Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions under paragraph (b)(48) of this section and that are also unrelated to the particular project, including any increased utilization due to product demand growth...” These emissions are referred to in this TSD as “Excludables.”

For existing emission units that are being modified, debottlenecked, or other affected units experiencing increased utilization as part of the project, the PSD baseline actual emissions are emissions averaged over a 24 consecutive month period. According to 40 CFR 52.21(b)(48)(ii), the 24 month period must occur “within the 10-year period immediately preceding either the date the owner or operator begins actual construction of the project, or the date a complete permit application is received.”

For a regulated NSR pollutant, when a project involves more than one emission unit, only one 24 consecutive month period may be used to determine the baseline actual emissions for all

emission units being changed. However, a different 24 consecutive month period can be used for each regulated NSR pollutant (40 CFR 52.21(b)(48)(ii)(d)).

For baseline emissions, Tesoro chose the following 24-month periods for the pollutant:

<b>Table 8. Tesoro's Chosen Dates for Baseline Actual Emissions</b>	
<b>24-month Period</b>	<b>Pollutant(s)</b>
January 2013–December 2014	VOC
June 2006–May 2008	NO <sub>x</sub> , CO, PM, PM <sub>10</sub> , PM <sub>2.5</sub> , CO <sub>2e</sub>
March 2008–February 2010	SO <sub>2</sub> , H <sub>2</sub> SO <sub>4</sub>

Ecology performed a thorough review of Tesoro's chosen BAE dates for comparison to Ecology emission inventory data. Ecology found only minor discrepancies which were for PM emissions for Unit F-6655. These were the result of roundoff error and do not affect the emission calculations or conclusions of this TSD.

### **3.2.2.1. NHT feed heater (Unit F-6600) actual-to-projected-actual applicability test**

Table 9 presents Tesoro's estimated emissions for Unit F-6600.

<b>Table 9. Emissions Increases of Regulated NSR Pollutants for Unit F-6600 (tpy)</b>											
<b>Emissions</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>H<sub>2</sub>SO<sub>4</sub></b>	<b>VOC</b>	<b>CO<sub>2e</sub></b>	<b>H<sub>2</sub>S</b>	<b>Pb</b>
BAE	17.0	20.2	1.5	1.5	1.5	3.2	0.0	0.8	22,435	*	*
Excludables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	624	*	*
Projected emissions	17.0	20.2	1.5	1.5	1.5	2.2	0.0	1.1	23,058	*	*
Change in emissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	*	*

\* Zero, negligible, or not applicable.

### **3.2.2.2. NHT stabilizer column reboiler (Unit F-6601) actual-to-projected-actual applicability test**

Table 10 presents Tesoro's estimated emissions for NHT Stabilizer Column Reboiler Unit F-6601.

<b>Table 10. Emissions Increases of Regulated NSR Pollutants for Unit F-6601 (tpy)</b>											
<b>Emissions</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>H<sub>2</sub>SO<sub>4</sub></b>	<b>VOC</b>	<b>CO<sub>2e</sub></b>	<b>H<sub>2</sub>S</b>	<b>Pb</b>
BAE	15.7	18.7	1.4	1.4	1.4	2.9	0.0	0.9	20,728	*	*
Excludables	3.4	4.1	0.3	0.3	0.3	0.0	0.0	0.2	5,311	*	*
Projected emissions	19.1	22.8	1.7	1.7	1.7	2.5	0.0	1.3	26,039	*	*
Change in emissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	*	*

\* Zero, negligible, or not applicable.

Table 13. Emissions Increases of Regulated NSR Pollutants for Units F-6651, F-6652, and F-6653 (tpy)											
Emission Unit	CO	NO <sub>x</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	H <sub>2</sub> SO <sub>4</sub>	VOC	CO <sub>2</sub> e	H <sub>2</sub> S	Pb
<b>F-6651</b>											
BAE	35.1	116.8	3.2	3.2	3.2	5.4	0.1	1.8	46,237	*	*
Excludables	2.6	8.8	0.2	0.2	0.2	0.0	0.0	0.7	5,013	*	*
Projected emissions	37.7	125.6	3.4	3.4	3.4	4.8	0.1	2.5	51,250	*	*
Change in emissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*	*
<b>F-6652</b>											

[illegible]

### 3.2.2.6. CR column heater (Unit F-6654) actual-to-projected-actual applicability test

Table 14 presents Tesoro’s estimated emissions for CR Column Heater Unit F-6654.

<b>Emissions</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>H<sub>2</sub>SO<sub>4</sub></b>	<b>VOC</b>	<b>CO<sub>2e</sub></b>	<b>H<sub>2</sub>S</b>	<b>Pb</b>
BAE	10.3	12.2	0.9	0.9	0.9	1.5	0.0	0.5	13,523	*	*
Excludables	1.3	1.5	0.1	0.1	0.1	0.0	0.0	0.1	2,177	*	*
Projected emissions	11.5	13.7	1.0	1.0	1.0	1.5	0.0	0.8	15,699	*	*
Change in emissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	*	*

\* Zero, negligible, or not applicable.

### 3.2.2.7. CR regeneration heater (Unit F-6655) actual-to-projected-actual applicability test

Table 15 presents Tesoro’s estimated emissions for CR Regeneration Heater Unit F-6655.

[illegible]

### 3.2.2.8. Existing storage tanks actual-to-projected-actual applicability test

Table 16 presents Tesoro's estimated emissions for the existing storage tanks.

<b>Table 16. Emissions Increases of Regulated NSR Pollutants for Existing Storage Tanks* (tpy)</b>											
<b>Emissions</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>H<sub>2</sub>SO<sub>4</sub></b>	<b>VOC</b>	<b>CO<sub>2e</sub></b>	<b>H<sub>2</sub>S</b>	<b>Pb</b>
BAE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.5	0.0	†	†
Projected emissions‡	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.8	0.0	†	†
Change in emissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.3	0.0	†	†
* Existing storage tanks include: Tanks 13, 14, 17, and 231. Emissions were calculated by Tesoro using TanksESP. † Zero, negligible, or not applicable. ‡ For existing tanks, the projected actual emissions are listed as provided in Tesoro's application.											

### 3.2.3. Hybrid test - significant emissions increase analysis summary

The total emission increases relating to the project is the sum of the increases from the existing units (projected actual minus baseline actual emissions) and the PTE from the proposed newly constructed units and is presented in Table 17. The federal rule defines a SER to be equal to or exceeding any of the SERs listed in Table 17 (40 CFR 52.21(b)(23)).

In addition to regulated NSR pollutants, GHGs are subject to regulation as of January 2, 2011. EPA's PSD rule under 40 CFR 52.21(b)(49)(iv) states that "beginning January 2, 2011, the pollutant GHGs is subject to regulation if:

- (a) The stationary source is a new major stationary source for a regulated NSR pollutant that is not GHGs, and also will emit or will have the potential to emit 75,000 tpy CO<sub>2e</sub> or more; or
- (b) The stationary source is an existing major stationary source for a regulated NSR pollutant that is not GHGs, and also will have an emissions increase of a regulated NSR pollutant, and an emissions increase of 75,000 tpy CO<sub>2e</sub> or more."

Tesoro is an existing major stationary source for at least one regulated NSR pollutant that is not GHGs. Based on Table 17, the proposed project is expected to result in a significant increase of three (3) other NSR regulated pollutants. Therefore, because the project will result in an emissions increase of 75,000 tpy of CO<sub>2e</sub>, the GHG emissions from the project are also subject to PSD review and are included in Table 17.

<b>Table 17. Total Estimated Project Emissions, Net Emissions, and SERs</b>			
<b>Pollutant</b>	<b>Project Estimated Emissions</b>	<b>SER (tpy)</b>	<b>Emissions Greater than SERs (Yes/No)</b>
NO <sub>x</sub>	36.7	40	No
CO	33.0	100	No
SO <sub>2</sub>	39.3	40	No
PM	21.6	25	No
PM <sub>10</sub>	21.6	15	Yes
PM <sub>2.5</sub>	21.6	10	Yes
VOCs	101.9	40	Yes
Lead (Pb)	Negligible	0.6	No
Sulfuric acid (H <sub>2</sub> SO <sub>4</sub> )	0.1	7	No
Hydrogen Sulfide (H <sub>2</sub> S)	Negligible	10	No
CO <sub>2</sub> e (GHGs)	353,093	75,000	Yes
Fluorides	Negligible	3	No
Total reduced sulfur (TRS)	Negligible	10	No
Reduced sulfur compounds	Negligible	10	No
Municipal waste combustor/ landfill emissions	*	†	No
* The project does not involve municipal waste.			
† See 40 CFR 52.21(b)(23).			

Based on Table 17, four (4) pollutants have significant emission increases.

### 3.3. Significant Net Emissions Increase Calculations

The steps necessary to calculate the net emission increase are outlined in 40 CFR 52.21(b)(3)(i). When a netting analysis is performed, only the pollutants that have significant emission increases need to go through the analysis.

#### 3.3.1. Netting rules

According to 40 CFR 52.21(b)(3)(i), a net emissions increase means, with respect to any regulated NSR pollutant emitted by a major stationary source, the amount by which the sum of the following exceeds zero: the increase in emissions from a particular physical change or change in the method of operation at a stationary source; and any other increases and decreases in actual emissions at the major stationary source that are contemporaneous with the particular change and are otherwise creditable.

An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs between the date five years before construction on the particular change commences; and the date that the increase from the particular change occurs.

An increase or decrease in actual emissions is creditable only if: the reviewing authority has not relied on it in issuing a permit, which is in effect when the increase in actual emissions from the particular change occurs; and the increase or decrease in emissions did not occur at a Clean Unit (with some exceptions). It also includes increase or decrease in fugitive emissions (to the extent quantifiable), for an emissions unit that is part of one of the major source categories.

An increase or decrease in actual emissions of sulfur dioxide (SO<sub>2</sub>), PM, or NO<sub>x</sub> that occurs before the applicable minor source baseline date is creditable only if it is required to be considered in calculating the amount of maximum allowable increases remaining available.

An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.

A decrease in actual emissions is creditable only to the extent that the old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions. It must also be enforceable as a practical matter at and after the time that actual construction on the particular change begins. It must also have approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change.

An increase that results from a physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.

### **3.3.2. Netting analysis**

For the Tesoro CPUP, construction is expected to occur in early 2017 and be completed in 2018. Therefore, the contemporaneous period for the CPUP extends from early 2012 through the time in 2018 when the change in project emissions occurs. Table 18 presents the Tesoro's estimated netting analysis changes in emissions, with specific project notes from the application included for each applicable project.

<b>Table 18. Netting Analysis Changes in Emissions (tpy)</b>					
<b>Project</b>	<b>Project Start Date</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>VOC</b>	<b>CO<sub>2e</sub></b>
Rail Unloading Project	September 2012	*	*	0.6	*
Product Loading Rack Project	October 2015	*	*	13.0	*
Flare Gas Recovery Project	October 2015	*	*	1.3	*

<b>Table 18. Netting Analysis Changes in Emissions (tpy)</b>					
<b>Project</b>	<b>Project Start Date</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>VOC</b>	<b>CO<sub>2e</sub></b>
Heater F-101 Burner Replacement Project	May 2015	*	*	0.0	*
Heater F-103 Burner Replacement Project	May 2015	*	*	0.0	*
CCU Feed Import Project	~June 2016	*	*	2.8	*
Marine Vapor Recovery (control existing vapors)	~2017	*	*	-472.9	*
<b>Net Emission Changes</b>	*	*	*	-455.1	*
* Zero, negligible, or not applicable. A netting analysis was not performed for PM10, PM2.5, and CO2e.					

### 3.3.3. Significant net emissions increase analysis summary

Estimated project net emissions and SERs for each of these pollutant are shown in Table 19.

<b>Table 19. Total Estimated Project Net Emissions and SERs</b>			
<b>Pollutant</b>	<b>Net Emissions (tpy)*</b>	<b>SER (tpy)</b>	<b>Net Emissions Greater than SERs (Yes/No)</b>
PM <sub>10</sub>	21.6	15	Yes
PM <sub>2.5</sub>	21.6	10	Yes
VOCs	-353.3	40	No
CO <sub>2e</sub> (GHGs)	347,644	75,000	Yes
* Secondary emissions are not included for PSD applicability, but modeling impacts do include secondary emissions. See Section 5.			

After netting, Tesoro's CPUP triggers PSD for the three (3) pollutants listed in Table 19.

## 4. BACT

### 4.1. Definitions and Policy Concerning BACT

All new major sources or major modifications are required to utilize BACT for those new and modified emission units that will experience an increase in emissions as a result of the project. BACT is defined as an emissions limitation based on the maximum degree of reduction for each pollutant subject to regulation, emitted from any proposed major stationary source or major modification, on a case-by-case basis, taking into account cost-effectiveness, economic, energy, environmental, and other impacts (40 CFR §52.21(b)(12)).



Federal guidance requires each PSD permit applicant to implement a “top-down” BACT analysis process for each new or physically or operationally changed emissions unit. Ecology has adopted the top-down BACT process for its BACT determinations. This top-down BACT analysis process consists of five basic steps described below:<sup>2</sup>

**Step 1.** Identify all available control technologies with practical potential for application to the specific emission unit for the regulated pollutant under evaluation.

**Step 2.** Eliminate all technically infeasible control technologies.

**Step 3.** Rank remaining control technologies by control effectiveness and tabulate a control hierarchy.

**Step 4.** Evaluate most effective controls and document results.

**Step 5.** Select BACT, which will be the most effective practical option not rejected, based on economic, environmental, and/or energy impacts.

If the applicant proposes to implement the most effective or “top” available control strategy, Step 4 is not necessary.

As shown above, the “top-down” BACT process starts by considering all available emission control technologies, and ranks them for further evaluation from most effective to least effective technically available control technology. The most effective emission reduction technology is then evaluated for economic feasibility. If the technology is proven infeasible based on economics, energy, or other environmental considerations, then the next most stringent level of reduction is considered. The most stringent level of emissions control that is not determined to be technically and economically infeasible is selected as BACT. While the permitting agency makes the final BACT decision, the burden is on the applicant to prove why the most stringent level of control should not be used.

Tesoro provided a 5-step top-down BACT analysis for the project, which was fully evaluated by Ecology and presented in the following subsections.

## **4.2. BACT Analysis for CPUP**

This section presents a BACT analysis for the applicable emission units and their pollutants for CPUP.

### **4.2.1. Available control technologies**

The EPA RACT/BACT/LAER Clearinghouse (RBLC), recent petroleum refinery BACT determinations, and other emission reduction information sources were reviewed to provide the following list of available control options. While these options have been identified as available,

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<sup>2</sup> See EPA’s *Draft New Source Review Workshop Manual*, 1990; and PSD and Title V Permitting Guidance for Greenhouse Gases <<http://www.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf>>.

they are not necessarily feasible (technically, economically, or otherwise). Some technologies such as selective catalytic reduction (SCR), are not included because they focus on pollutants (NO<sub>x</sub>) which do not trigger PSD NSR review for CPUP. In addition, an SCR could potentially increase particulate emissions. The available technologies as reviewed in the application and by Ecology are listed below.

#### **4.2.1.1. Dry electrostatic precipitator**

A dry electrostatic precipitator (ESP) removes particles from an air stream by electrically charging the particles, then passing them through a force field that causes them to migrate to an oppositely charged collector plate. An ESP generally refers to a dry ESP unless specifically noted otherwise. The dust from the collector plates falls into a collection hopper at the bottom of the ESP. The collection efficiency of an ESP depends on particle diameter, electrical field strength, gas flowrate, and plate dimensions. A dry ESP is used for dry pollutants and uses a dry collecting surface.

#### **4.2.1.2. Wet electrostatic precipitator**

This control technology is identical to a dry ESP except that a wet electrostatic precipitator (WESP) has a wet collecting surface and can be used for both wet and dry pollutants. The water addition can perform a number of tasks. It can change the electrical properties of the fly ash and can improve (or reduce) removal efficiency. The water is also used to remove sticky ashes from the ESP collector plates or to condense and remove semi-volatile compounds like some high molecular weight organic compounds. Unlike a dry ESP which removes only dry pollutants, a wet ESP can potentially remove solid, liquid, and soluble gas pollutants.

#### **4.2.1.3. Wet scrubber**

Wet scrubbers intercept dust particles using droplets of liquid (usually water). The larger, particle-enclosing water droplets are separated from the remaining droplets by gravity. The solid particulates are then separated from the water.

#### **4.2.1.4. Fabric filter (baghouse)**

A fabric filter (baghouse) consists of several fabric filters, typically configured in long, vertically suspended sock-like configurations. Dirty gas enters from one side, often from the outside of the bag, passing through the filter media and forming a particulate cake. The cake is removed by shaking or pulsing the fabric, which loosens the cake from the filter, allowing it to fall into a bin at the bottom of the baghouse. A variety of fabrics is available to cover fuel gas temperatures up to about 650°F. Baghouses are unsuitable for use on water saturated gas streams.

#### **4.2.1.5. Clean fuels**

Clean fuels such as low sulfur fuel and natural gas cause comparably lower emissions than other common fuels.

#### **4.2.1.6. Good combustion practices and design**

This is the most basic combustion modification technique available. Good combustion practices (GCP) imply that the emission unit is operated within parameters that minimize emissions of air pollutants and maximize combustion efficiency. A properly operated emission unit will minimize the formation of PM emissions. Good operating practices for combustion units typically consist of controlling parameters such as fuel feed rates and air/fuel ratios. Sometimes, an operating practice that minimizes one pollutant, increases the formation of another pollutant. Operators can control the combustion stoichiometry to minimize pollutant formation while achieving efficient fuel combustion. As noted in the application: “An inherently low-emitting production process is one that maximizes product (in this case steam) yield and thermal efficiency while minimizing pollutant emissions. This is typically achieved by utilizing equipment design that minimizes fuel and energy use. Energy efficiency is the term typically used to encompass these concepts.” Proper design of combustion units (e.g., boilers) concerns features such as the fuel and combustion air delivery system and the shape and size of the combustion chamber.

#### **4.2.1.7. Carbon capture and storage**

Carbon Capture and Storage or Sequestration (CCS) technology includes three stages: removing or segregating CO<sub>2</sub> from the gas stream; compressing and transporting the CO<sub>2</sub>; and permanently storing the CO<sub>2</sub>.

#### **4.2.1.8. Leak detection and repair**

A leak detection and repair monitoring program (or LDAR) consists of five main elements: identifying components that could have potential leaks; a definition of a leak for a specific component; monitoring components; repairing components; and recordkeeping.

### **4.2.2. BACT feasibility review**

Table 20 addresses the technical feasibility of implementing each control technology from Section 4.2.1. for the project.

<b>Table 20. Technical Feasibility Assessment</b>			
<b>Emission Unit(s)</b>	<b>Control</b>	<b>Technical Feasibility Assessment</b>	<b>Applicable Pollutants</b>
Boiler, MVEC	Clean fuels	Technically feasible	PM <sub>10</sub> , PM <sub>2.5</sub> , GHG
Boiler, MVEC	GCPs and design	Technically feasible	PM <sub>10</sub> , PM <sub>2.5</sub> , GHG
Fugitive components	LDAR monitoring	Technically feasible	GHG

<b>Table 20. Technical Feasibility Assessment</b>			
<b>Emission Unit(s)</b>	<b>Control</b>	<b>Technical Feasibility Assessment</b>	<b>Applicable Pollutants</b>
Fugitive components	Optical gas imaging LDAR monitoring	Technically feasible	GHG
Boiler, MVEC	CCS	<u>Technical feasibility is uncertain:</u> As noted in the application, CCS is available to be considered as a Step 1 BACT control, but it is a developing technology and not fully commercially available.	GHG
Boiler, MVEC	Fabric filter	<u>Technically infeasible:</u> A fabric filter is technically infeasible because particulate emissions from the boiler and MVEC are primarily condensable particulate matter.	PM <sub>10</sub> , PM <sub>2.5</sub>
Boiler, MVEC	Dry ESP	<u>Technically infeasible:</u> A dry ESP is technically infeasible because particulate emissions from the boiler and MVEC are primarily condensable particulate matter.	PM <sub>10</sub> , PM <sub>2.5</sub>
Boiler, MVEC	WESP	<u>Technically infeasible:</u> A WESP is potentially more technically feasible for condensable particulate than a dry ESP or fabric filter, but for a natural gas fired boiler and MVEC, both with very low particulate concentrations, a WESP is not effective enough to be considered technically feasible.	PM <sub>10</sub> , PM <sub>2.5</sub>
Boiler, MVEC	Wet scrubber	<u>Technically infeasible:</u> A wet scrubber is potentially more technically feasible for condensable particulate than a dry ESP or fabric filter, but for a natural gas fired boiler and MVEC, both with very low particulate concentrations, a wet scrubber is not effective enough to be considered technically feasible.	PM <sub>10</sub> , PM <sub>2.5</sub>

#### **4.2.3. PM<sub>10</sub> and PM<sub>2.5</sub> BACT for new boiler**

This section addresses PM<sub>10</sub>/PM<sub>2.5</sub> control including: ranking of control technologies; evaluating economic, energy, and environmental impacts; and selection of BACT for PM<sub>10</sub>/PM<sub>2.5</sub>.

##### **4.2.3.1. Ranking of boiler BACT controls for PM<sub>10</sub>/PM<sub>2.5</sub> for the boiler**

The potential control options listed in Table 20, above, are ranked in Table 21 based on the control efficiencies documented as being achieved in practice.

<b>Table 21. Ranking of Control Technologies for New Boiler (PM<sub>10</sub>/PM<sub>2.5</sub> BACT)</b>		
<b>Type of Control Technology</b>	<b>Control Efficiency</b>	<b>Ranking</b>
Clean fuels	0.0075 lb/MMBtu	1
GCP and design	0.0075 lb/MMBtu	2

#### **4.2.3.2. Evaluation of BACT impacts for PM<sub>10</sub>/PM<sub>2.5</sub> for new boiler**

Because Tesoro selects both options with similar control efficiency, no further evaluation is necessary.

#### **4.2.3.3. BACT selection for PM<sub>10</sub>/PM<sub>2.5</sub> for new boiler**

Tesoro proposes that BACT is clean fuels with good design methods and operating practices, with a BACT limit of 0.0075 lb/MMBtu, and a mass emissions limit of 4.4 lb/hr. The compliance demonstration will be based upon applying an emission factor that will be calculated using the average of three (3) 1-hour stack test runs measured using EPA Methods 5/202. Method 201A can be used as an alternate method for Method 5.

For start-up and shutdown emissions, Tesoro proposes that good combustion practices will prevent the short-term NAAQS from being exceeded. Tesoro bases this on their dispersion modeling, which demonstrates that the new boiler will comply with the NAAQS using an emission rate of 4.4 lb/hr PM<sub>10</sub>/PM<sub>2.5</sub>. This emission rate is based on the proposed BACT performance standard of 0.0075 lb/MMBtu and the maximum heat input capacity of 584 MMBtu/hr. Tesoro does not expect that boiler emission rates will exceed 4.4 lb/hr during start-up and shutdown “because the firing rate will be much less than the maximum heat input capacity, and the emissions performance will not be significantly different than during normal operations as a result of following good combustion practices.”

Ecology agrees with Tesoro’s proposed mass emission BACT determination for PM<sub>10</sub> and PM<sub>2.5</sub>, but with an extra significant figure after the decimal as listed in the permit (4.38 pounds per hour).

#### **4.2.4. GHG BACT for new boiler**

This section addresses GHG control including: ranking of control technologies; evaluating economic, energy, and environmental impacts; and selection of BACT for GHG.

##### **4.2.4.1. Ranking of boiler BACT controls for GHG for the boiler**

The potential control options listed in Table 20 above, are ranked in Table 22 based on the control efficiencies documented as being achieved in practice.

<b>Table 22. Ranking of Control Technologies for New Boiler (GHG BACT)</b>		
<b>Type of Control Technology</b>	<b>Control Efficiency</b>	<b>Ranking</b>
CCS	<ul style="list-style-type: none"> <li>• 90% CO<sub>2e</sub> capture</li> <li>• 12 lb CO<sub>2e</sub>/MMBtu</li> </ul>	1
Clean fuels	117 lb CO <sub>2e</sub> /MMBtu	2
GCP and design (inherently low-emitting processes)	117 lb CO <sub>2e</sub> /MMBtu	3

#### **4.2.4.2. Evaluation of BACT impacts for GHG for new boiler**

Tesoro estimates that CCS would have an installed capital cost of \$101 million, an annualized operating cost of \$17.8 million/year, and a pollution control cost of approximately \$101 per ton. The CSS option is not economically feasible because the capital costs is approximately equal to 30% of the full CPUP cost, and 10 times greater than the estimated installed costs of the boiler. Because Tesoro selects both of the remaining options with similar control efficiency, no further evaluation is necessary.

#### **4.2.4.3. BACT selection for GHG for new boiler**

After eliminating the infeasible control efficiency options in Table 20, Tesoro proposes that BACT is clean fuels with good design methods and inherently low-emitting process, with a BACT limit of 117 lb CO<sub>2e</sub>/MMBtu and 299,524 tpy on a 12-month rolling average basis.

Ecology accepts Tesoro's BACT proposal for GHG emissions from the new boiler.

#### **4.2.5. PM<sub>10</sub> and PM<sub>2.5</sub> BACT for MVEC**

This section addresses PM<sub>10</sub>/PM<sub>2.5</sub> control including: ranking of control technologies; evaluating economic, energy, and environmental impacts; and selection of BACT for PM<sub>10</sub>/PM<sub>2.5</sub>.

##### **4.2.5.1. Ranking of MVEC BACT controls for PM<sub>10</sub>/PM<sub>2.5</sub>**

The potential control options listed in Table 20 above, are ranked in Table 23 based on the control efficiencies documented as being achieved in practice.

<b>Table 23. Ranking of Control Technologies for MVEC (PM<sub>10</sub>/PM<sub>2.5</sub> BACT)</b>		
<b>Type of Control Technology</b>	<b>Control Efficiency</b>	<b>Ranking</b>
Clean fuels	0.0075 lb/MMBtu	1
GCP and design	0.0075 lb/MMBtu	2

#### **4.2.5.2. Evaluation of BACT impacts for PM<sub>10</sub>/PM<sub>2.5</sub> for MVEC**

Because Tesoro selects both options with similar control efficiency, no further evaluation is necessary.

#### **4.2.5.3. BACT Selection for PM<sub>10</sub>/PM<sub>2.5</sub> for MVEC**

Tesoro proposes that BACT is clean fuels with good design methods and operating practices, with a BACT limit of 0.0075 lb/MMBtu, and a mass emissions limit of 0.9 lb/hr. The compliance demonstration will be based upon applying an emission factor that will be calculated using the average of three (3) 1-hour stack test runs measured using EPA Methods 5/202. Method 201A can be used as an alternate method for Method 5.

For start-up/shutdown emissions, Tesoro believes good combustion practices will be protective of the short-term NAAQS. Tesoro basis this on their dispersion modeling, which demonstrates that the MVEC will comply with the NAAQS using an emission rate of 0.9 lb/hr PM<sub>10</sub>/PM<sub>2.5</sub>. Tesoro does not expect that MVEC emission rates will exceed 0.9 lb/hr during start-up and shutdown “because the firing rate will be much less than the maximum heat input capacity, and the emissions performance will not be significantly different than during normal operations as a result of following good combustion practices.”

Ecology accepts Tesoro’s BACT proposal for PM<sub>10</sub>/PM<sub>2.5</sub> emissions for the MVEC system.

#### **4.2.6. GHG BACT for MVEC**

This section addresses GHG BACT control including: ranking of control technologies; evaluating economic, energy, and environmental impacts; and selection of BACT for GHG.

##### **4.2.6.1. Ranking of BACT controls for GHG BACT**

The potential control options listed in Table 20 above, are ranked in Table 24 based on the control efficiencies documented as being achieved in practice.

<b>Table 24. Ranking of Control Technologies for MVEC (GHG BACT)</b>		
<b>Type of Control Technology</b>	<b>Control Efficiency</b>	<b>Ranking</b>
CCS	<ul style="list-style-type: none"><li>• 90% CO<sub>2</sub> capture</li><li>• 2,944 tpy CO<sub>2</sub>e</li></ul>	1
Clean fuels	29,439 tpy CO <sub>2</sub> e	2

##### **4.2.6.2. Evaluation of BACT impacts for GHG**

Tesoro estimates that CCS would not be economically feasible based upon the evaluation conducted for the boiler. The MVEC has a significantly smaller capacity than the boiler and operates intermittently..

#### **4.2.6.3. BACT selection for GHG**

Tesoro proposes that BACT is clean fuels with a BACT limit of 29,439 tpy CO<sub>2</sub>e.

Ecology accepts Tesoro's BACT proposal for GHG emissions from the MVEC system.

#### **4.2.7. GHG BACT for fugitive components**

This section addresses GHG control including ranking of control technologies; evaluating economic, energy, and environmental impacts; and selection of BACT for GHG.

##### **4.2.7.1. Ranking of BACT controls for GHG**

The potential control options listed in Table 20 above, are ranked in Table 25 based on the control efficiencies documented as being achieved in practice.

<b>Table 25. Ranking of Control Technologies for Fugitive Components (GHG BACT)</b>		
<b>Type of Control Technology</b>	<b>Control Efficiency</b>	<b>Ranking</b>
LDAR monitoring	Standard leak rates	1
Optical gas imaging LDAR monitoring	Camera leak detection is on qualitative basis; additional Method 21 monitoring required to quantify leak rate	2

##### **4.2.7.2. Evaluation of BACT impacts for GHG**

Because Tesoro selects the top control option, no further evaluation is necessary.

##### **4.2.7.3. BACT selection for GHG**

GHG emissions from fugitive components are assumed to be methane. As noted in the application, because both VOC and methane emissions are released from fugitive components in the gaseous state, VOC leak rates for both VOC and methane emissions are used. Tesoro proposes that BACT is "an LDAR monitoring program in accordance with the applicable requirements for each affected process unit. Components in natural gas service will also be included in the LDAR monitoring program. The ARU process unit will be subject to LDAR requirements under 40 CFR 60 Subpart VVa and 40 CFR 63 Subpart H. The CR/NHT and Isom Unit are subject to LDAR requirements under 40 CFR 60 Subpart GGGa and 40 CFR 63 Subpart CC."

Ecology accepts Tesoro's BACT proposal for GHG emissions from the fugitive components.



### **4.3. Toxic Air Pollutants**

PSD rules require the applicant to consider emissions of TAPs during the course of a BACT analysis, but specifically exempt all pollutants subject to regulation under Section 112 of the federal Clean Air Act from regulation under the PSD program.

The emissions of TAPs will be covered in the NWCAA NOC approval for this project.

## **5. AMBIENT AIR QUALITY IMPACTS ANALYSIS**

### **5.1. Regulatory Requirements**

For PSD, an ambient Air Quality Impacts Analysis (AQIA) is required for all pollutants that are emitted in significant quantities to determine the ambient impacts associated with the construction and operation of the proposed modifications. The main purpose of the air quality analysis is to demonstrate that new emissions emitted from the proposed major stationary source or major modification will not cause or contribute to a violation of any applicable NAAQS or PSD increment.

The AQIA starts with preliminary modeling for each pollutant to determine whether an applicant can forego detailed analysis and preconstruction monitoring. If the projected ambient concentration increase for a given pollutant is below the PSD Significant Impact Levels (SILs) and Significant Monitoring Concentration (SMCs) for each averaging period, no further analysis of the ambient impact is required for that pollutant. While secondary emissions are not included when determining PSD applicability, they are included when considering air quality impacts. The impacts to Class I and Class II areas (see Tables 27 and 26 respectively), include approximately 0.084 tons per year PM emissions from secondary vessel unloading operations.

For those pollutants with averaging periods that have impacts greater than the SIL, a full impact analysis (taking into account other increment consuming sources) is used to demonstrate compliance with NAAQS and PSD increments.

Typically, the AQIA includes an analysis of impacts to local areas that are within 50 kilometers (km) of the project, and a regional air quality impact assessment for impacts beyond 50 km. For projects in Washington State, this latter analysis usually includes impacts on Class I areas.

The AERMOD dispersion model was used for predicting local impact concentrations. The Community Multi-Scale Air Quality (CMAQ) model was used to develop the background concentrations.

### **5.2. Maximum Criteria Pollutant Concentrations Predicted by AERMOD**

Using project emissions only, AERMOD predicted impacts for criteria pollutants compared to SILs and Monitoring de minimis levels or SMCs are presented in Table 26.

<b>Table 26. Maximum Criteria Pollutant Concentrations Predicted by AERMOD for Class II</b>					
<b>Criteria Pollutant</b>	<b>Avg. Period</b>	<b>Max AERMOD Concentration In Class II Areas (µg/m<sup>3</sup>)</b>	<b>SIL* (µg/m<sup>3</sup>)</b>	<b>SMC* (µg/m<sup>3</sup>)</b>	<b>Is AERMOD Concentration Greater than Applicable SIL or SMC?</b>
PM <sub>10</sub>	24-hr	2.73	5	10	No
	Annual	0.14	1	---	No
PM <sub>2.5</sub>	24-hr	1.06	0.07, 1.2, 1.2	4	No
	Annual	0.13	0.06, 0.3, 0.3	---	No
* Listed SILs and SMCs were promulgated on October 20, 2010 and became effective December 20, 2010. PM <sub>2.5</sub> SILs are for Class I, II, and III areas, respectively, and are the only SILs with different values for the three different Class areas (I, II, and III). PM <sub>2.5</sub> SIL and SMC in PSD rules were vacated on January 22, 2013.					

Because project impacts are not greater than the SILs, a full impact analysis (taking into account other increment consuming sources) is not required to demonstrate compliance with NAAQS and Class II PSD increments. NAAQS compliance is assumed and compliance with WAAQS is assumed by compliance with NAAQS.

In addition to considering NAAQS, Ecology also considered the general vicinity around this project with regards to general environmental justice concerns. In Ecology's analysis, it is noted that Section 6 of this TSD considered construction and area growth affects (temporary and minimal) due to this project as well as visibility (stack plumes dissipate short distances from the facility due to dispersion and evaporation, of which this project is only a small contributor). Based on this information, along with consideration of the general population of the area, Ecology concludes that minority or low-income populations will not experience disproportionately high and adverse human health or environmental effects due to exposure to relevant criteria pollutants as a result of this project.

The PSD pollutants (PM<sub>10</sub>, PM<sub>2.5</sub> and GHG) are not considered TAPs. Furthermore, the project will not result in any increased use of existing stationary diesel engines and no new diesel engines will be installed so that the TAP referred to as diesel engine exhaust, particulate or DEEP, will not be emitted by the project. Therefore, a comparison to ASILs is not included in this TSD.

#### **5.2.1. Secondary PM<sub>2.5</sub> formation**

Precursors of PM<sub>2.5</sub> include NO<sub>x</sub>, SO<sub>2</sub>, and VOCs. Under specific atmospheric conditions, these precursors may coagulate onto existing particles or nucleate into new particles. Based on the analysis presented as stated in the application and in consultation with Ecology modelers, "As part of the EPA modeling guidance for PM<sub>2.5</sub>, the modeling requirements for projects with

emission increases of direct PM<sub>2.5</sub> above the SER, but the increases of NO<sub>x</sub> and SO<sub>2</sub> are below the SER... only the modeling of primary PM<sub>2.5</sub> is needed - a modeling evaluation of secondary PM<sub>2.5</sub> is not required.”

### **5.3. Ozone Impacts**

NO<sub>x</sub> and VOCs are precursors to ozone. Because the proposed emission increases in VOCs and NO<sub>x</sub> from the CPUP will not exceed 100 tpy for either pollutant, a demonstration that the project would not cause or significantly contribute to a violation of the ozone NAAQS was not required. However, the following background information for ozone is provided.

#### **5.3.1. Ozone background information**

EPA has set primary and secondary ozone standards to protect human health and welfare. On March 12, 2008, EPA revised the primary and secondary ozone standards to 0.075 ppm for an 8-hr average. And, EPA lowered it again in December 2015 to 0.070 ppm for an 8-hr average.

Ozone is formed in the troposphere when sunlight causes complex photochemical reactions involving NO<sub>x</sub>, VOCs, and CO that originate chiefly from gasoline engines and burning of other fossil fuels. Woody vegetation is another major source of VOC emissions to NO<sub>x</sub> emissions within the surrounding airshed, and the relative reactivities of the VOC species. NO<sub>x</sub> and VOCs can be transported long distances by regional weather patterns before they react to create ozone in the atmosphere, where it can persist for several weeks. Because ozone is a regional pollutant, precursor sources both near and far can contribute to ozone formation.

Breathing ozone can trigger a variety of health problems for humans, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Elevated levels of ozone can also reduce lung function by inflaming the linings of the lungs. Repeated exposure to elevated concentrations of ozone may permanently scar lung tissue. Ozone is also phytotoxic, causing damage to a variety of vegetation (Ashmore et al., 2004). Ozone pollution has been shown to reduce plant growth, alter species composition, and predispose trees to insect and disease attack. Ozone also causes direct foliar injury to some plant species. Ozone affected leaves are marked with discoloration and lesions, and they age more rapidly than normal leaves (EPA, 2007).

Ozone enters plants through leaf stomata, causing changes in biochemical and physiological process. The mesophyll cells under the upper epidermis of leaves are the most sensitive to ozone, and those are the first cells to die. The adjacent epidermal cells then die, forming a small black or brown interveinal necrotic lesion that becomes visible on the upper surface of the leaf. These lesions, termed oxidant stipple, are quite specific indicators that the plant has been exposed to ozone. There are other plant symptoms that can result from exposure to ozone. However, these symptoms are non-specific for ozone since other stressors can also cause them to occur. In general, the most reliable indicator that ozone has impacted vegetation is oxidant stipple.

In addition to effecting individual plants, ozone can also affect entire ecosystems. Plants growing in areas with high exposure to ambient ozone may undergo natural selection for ozone tolerance (EPA, 2007). The final result could be the elimination of the most ozone sensitive genotypes from the area (National Park Service, 2010).

While VOCs and NO<sub>x</sub> are recognized as precursors to the formation of ground level ozone, which is regulated as a criteria pollutant, the FLAG guidance states that “current information indicates most FLM areas are NO<sub>x</sub> limited” with respect to the formation of ground level ozone. A NO<sub>x</sub> limited region is one where the concentration of ozone depends on the amount of NO<sub>x</sub> in the atmosphere. This occurs when there is a lack of nitrogen dioxides, thus inhibiting ozone titration when oxygen mixes with VOCs. In these regions, controlling NO<sub>x</sub> would reduce ozone concentrations. A VOC’s limited region is one where concentration of ozone depends on the amount of VOCs in the atmosphere. In these regions, controlling VOCs would reduce ozone concentrations. The FLAG guidance further states that “until there is enough information available for FLAG to determine whether ozone formation in each FLM area is primarily limited by NO<sub>x</sub> or VOC emissions, we will assume all FLM areas are NO<sub>x</sub> limited and will focus on control of NO<sub>x</sub> emissions” (FLAG Executive Summary and Section 3.4.5).

#### 5.4. Impacts on Class I Areas

As shown in Table 27, project impacts in Class I areas are not greater than the SILs. Therefore, an impact analysis (taking into account other increment consuming sources) is not required to demonstrate compliance with NAAQS and PSD increments.

<b>Table 27. Maximum Criteria Pollutant Concentrations Predicted by AERMOD for Class I</b>				
<b>Criteria Pollutant</b>	<b>Avg. Period</b>	<b>Max AERMOD Concentration In Class I Areas (µg/m<sup>3</sup>)</b>	<b>SIL* (µg/m<sup>3</sup>)</b>	<b>Is AERMOD Concentration Greater than Applicable SIL</b>
PM <sub>10</sub>	24-hr	0.0862	5	No
	Annual	0.0021	1	No
PM <sub>2.5</sub>	24-hr	0.0467	0.07, 1.2, 1.2	No
	Annual	0.0018	0.06, 0.3, 0.3	No
* Listed SILs were promulgated on October 20, 2010 and became effective December 20, 2010. PM <sub>2.5</sub> SILs are for Class I, II, and III areas, respectively, and are the only SILs with different values for the three different Class areas (I, II, and III). PM <sub>2.5</sub> SIL in PSD rules were vacated on January 22, 2013.				

However, in addition to addressing NAAQS and PSD increments, PSD rules require an analysis of air quality related values (AQRVs) on federally mandated Class I areas. Class I areas are defined in the Clean Air Act as having special national or regional value from a natural, scenic, recreational, or historic perspective. Class I areas include national parks over 6,000 acres and wilderness areas and memorial parks over 5,000 acres as of 1977. The impacts to these areas are stringently regulated because they have remained relatively untouched by development.

#### 5.4.1. AQRV background information

PSD regulations and guidance require additional impact analyses to evaluate the effects of the project's emissions on visibility, local soils, and vegetation in Class I and in also in Class II areas (see Section 6), and the effect of increased air pollutant concentrations on flora and fauna in the Class I areas. The additional impact analyses are also used to evaluate the effect of the project on growth in the area surrounding the project in Class II areas (see Section 6).

The analyses assess increment consumption and impacts on AQRVs in Class I areas. AQRVs include regional visibility or haze, the effects of primary and secondary pollutants on sensitive plants, the effects of pollutant deposition on soils and receiving water bodies, and other effects associated with secondary aerosol formation. The FLMs for the National Park Service, U.S. Fish and Wildlife Service, and U.S. Forest Service have the responsibility of ensuring AQRVs in the Class I areas are not adversely affected. The Federal Land Managers' (FLMs) guidance on evaluating impacts of major projects on Class I areas is the *Federal Land Managers' Air Quality Related Values Work Group (FLAG) Phase I Report – revised* (2010) (National Park Service, 2010).

In FLAG, the FLMs have developed a tool to screen out projects that would not have a significant impact on AQRVs based on annual emissions and distance from a Class I area. This screening tool is called the Q/D Method, which is to divide the amount of emission increases in tons per year (Q) by the distance to a federal Class I area in km (D). FLAG states that "The FLM role within the regulatory context consists of considering whether emissions from a new source, or emission increases from a modified source, may have an adverse impact on AQRVs and providing comments to permitting authorities. Therefore, the agencies will consider a source locating greater than 50 km from a Class I area to have negligible impacts with respect to Class I AQRVs if its total SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>10</sub>, and H<sub>2</sub>SO<sub>4</sub> (sulfuric acid) annual emissions (in tons per year, based on 24-hour maximum allowable emissions), divided by the distance (in km) from the Class I area (Q/D) is 10 or less. The agencies would not request any further Class I AQRV impact analyses from such sources."

#### 5.4.2. Tesoro AQRV analysis

For the Tesoro CPUP, the only pollutants that would have a significant net increase are PM<sub>2.5</sub>, PM<sub>10</sub>, and GHG. Note that PM<sub>2.5</sub> and GHG are not among the pollutants that the FLMs recommend including in the calculation of Q. The Q/D values for each Class I area in Washington is presented in Table 27.

Table 28. Class I Areas within 200 KM of the Tesoro Facility				
Area	Distance (D) from Tesoro to Class I Area (km)	Quantity (Q) of Max 24-hr Emission Increase (tpy)	Q Divided by D (Q/D) (tons/km)	Is Q/D Less than 10? (Yes/No)
Alpine Lakes Wilderness Area	118	372	3.2	Yes
Glacier Peak Wilderness Area	86	372	4.3	Yes
Pasayten Wilderness Area	117	372	3.2	Yes
Olympic National Park	72	372	5.2	Yes
North Cascades National Park	76	372	4.9	Yes
Mount Rainier National Park	173	372	2.2	Yes
Goat Rocks Wilderness Area	217	372	1.7	Yes
Mount Baker Recreation Area*	49	372	7.6	Yes
San Juan Islands	This is not a Class I area. As noted in the application: “There are several national monuments and state parks near the project area, including San Juan Islands National Monument, Moran State Park, Larrabee State Park, Bay View State Pare, and Deception Pass State Park. The closest of these sensitive Class II areas is Bay View State Park, and Washington State Parks indicates that scenic views are a feature of in this area, however, visibility concerns are not noted in the State Parks Natural Resource Management Policy. Emissions from the Project are not expected to change the overall plume visibility from the facility in any nearby scenic areas.”			
Columbia River Gorge	This land, managed by the forest service, is not a Class I area, but is sometimes included in regional haze considerations by request of the FLMs. It is located farther from the project than closer Class I areas which are not expected to have adverse impacts from the project. Therefore, it is not expected to have an adverse impact.			
* Mount Baker Recreation Area is not a Class I area. As noted in the application: “Based on discussions with Ecology at the March 9, 2015, pre-application meeting, there is no specific requirement to conduct near-field visibility analyses except for the Mt. Baker, Class II scenic vista. Ecology has requested that Mt. Baker be considered a “Class I area” for visibility analysis and perform the same level of analysis as any potentially impacted Class I area.”				

Because Q/D is less than 10 for all areas in Table 27, additional Class I AQRV impact analyses are not required. Also as explained in Section 5.2, because project impacts are not greater than the SILs, a full impact analysis (taking into account other increment consuming sources) is not required to demonstrate compliance with NAAQS and Class II PSD increments. NAAQS compliance is assumed and compliance with WAAQS is assumed by compliance with NAAQS.

#### **5.4.2.1. Soils and receiving water bodies (deposition)**

Ecology did not require Tesoro to perform a deposition analysis because the project emission rates for SO<sub>2</sub> and NO<sub>x</sub> are below the SERs. In addition, the other pollutants emitted by the project are not expected to contribute to impacts on soil and vegetation in the area surrounding the Tesoro refinery.

#### **5.4.2.2. Visibility (Class I areas)**

Because Q/D is less than 10 for all areas in Table 27, a visibility analysis in Class I areas is not required.

### **6. ADDITIONAL IMPACTS ANALYSIS**

#### **6.1. Construction and Growth Impacts**

The project will increase marine traffic but not rail traffic. As noted in the application based partly on SEPA: “Additional marine traffic will be associated with delivery of medium reformat feedstock and shipment of mixed xylenes product and gasoline components. Based on expected usage rates, and typical use of marine vessels, the proposed project would generate traffic of up to 60 marine vessels per year. This is a relatively small increase in marine traffic in comparison to recent operating years (and remains well below the annual marine vessel traffic of historical operating years.)”

No new area homes or industry are anticipated during construction or after construction as a result of the CPUP. Impacts from new commercial development are assumed to be minimal as the project will occur within the existing fenceline of Tesoro property.

The number of employees at Tesoro is expected to increase by approximately 20 full-time employees as a result of this project, with approximately 40 additional vehicle trips per year. During construction of this project, there will be approximately 300 to 500 additional employees on-site. Because existing traffic on the main highway to the facility (Washington State Route 20) has approximately 30,000 vehicles daily, the increased traffic due to construction and also once operational, are both expected to be negligible by comparison.

During this time, there will be increased traffic congestion, increased vehicle emissions, and increased demand for local skilled workers. However, because construction is expected to last only one to two years, these increases are expected to be temporary and insignificant. Therefore, the proposed project is not expected to cause adverse construction and growth related impacts.

## **6.2. Visibility**

As noted in the application, the 1990 draft NSR Workshop Manual provides the following description of a Class II visibility analysis in Chapter D, Section II.D:

*“In the visibility impairment analysis, the applicant is especially concerned with impacts that occur within the area affected by applicable emissions. Note that the visibility analysis required here is distinct from the Class I area visibility analysis requirement. The suggested components of a good visibility impairment analysis are:”* (addressed for each below the listed components in italics font):

- *“a determination of the visual quality of the area,”*

Regarding area regional haze, pre-existing visible water vapor (steam) plumes can be seen in the Anacortes Industrial Park area, both from Tesoro and other sources, which dissipate short distances from the facility due to dispersion and evaporation.

- *“an initial screening of emission sources to assess the possibility of visibility impairment, and”*

The project emissions are located within the existing Tesoro buildings and stacks so that after the project is completed, the project emission sources are not likely to impair local visibility any more than the existing facility emission sources.

- *“if warranted, a more in-depth analysis involving computer models.”*

As noted in the application: “The *Q/D* screening values for the Project indicate that emissions from the Project will not significantly impact visibility in either Class I or sensitive Class II areas.” For other Class II areas, the analysis provided for regional haze appears to be sufficient.

## **6.3. Soils and Vegetation Analysis**

Regarding economic impacts of the project on vegetation and soils, or agriculture and forestry, the project emissions comply with secondary NAAQS (assumed by compliance with SILs), which were intended to address factors such as soils and vegetation.

The following excerpt from the application which further addresses project impacts on soils and vegetation is pasted below:

“Adverse impacts to soils from air emissions are evaluated through an assessment of pollutant deposition. Sulfate and nitrate deposition are of interest due to the potential for acidification of soils. However, sulfate and nitrate deposition in soils is not expected to be of concern because the net increase of sulfur dioxide (SO<sub>2</sub>) and nitrogen oxide (NO<sub>x</sub>) emissions as a result of the Project will be below the respective significant emission rates. The Project will also have ammonia emissions, which could result in a small increase in nitrogen deposition....



“Deposition from ammonia emissions, in addition to that from NO<sub>x</sub> species, is of interest to vegetation and terrestrial ecosystems because of the ammonia’s nitrogen content. Due to the selective catalytic reduction (SCR) process in the proposed boiler, the maximum amount of ammonia estimated to be emitted from the project will be 11.5 tons per year (tpy). Ammonia does not have a significant emission rate with which to provide perspective on the importance of emissions to other resources, including soils and vegetation. Additionally, deposition from ammonia emissions is also of interest because ammonia is “relatively soluble in water and may be subject to both wet and dry deposition” and is expected to deposit locally. Recent studies indicate that vulnerable ecosystems are protected at nitrogen deposition rates below 5 to 10 kilograms of nitrogen per hectare per year (kg N/(ha•yr)). Using assumptions designed to overestimate rather than underestimate deposition, potential local deposition of ammonia from project emissions is estimated to be 0.09 kg N/(ha•yr) (see Table 1-1.) Current background nitrogen deposition is 0.55 kg N/(ha•yr). Thus, the potential nitrogen deposition from ammonia in addition to background rates in local terrestrial areas is 0.64 kg N/(ha•yr)—below the levels protective of vulnerable ecosystems, meaning that adverse impacts to soils and vegetation due to nitrogen from project ammonia emissions are not anticipated.”

Based on these deposition calculations in the application, Ecology believes Tesoro has satisfactorily addressed project impacts on Class II soils and vegetation.

## **7. STATE ENVIRONMENTAL POLICY ACT**

Under Washington State rules, a final PSD permit shall not be issued for a project until the applicant has demonstrated that State Environmental Policy Act (SEPA) review has been completed for the project. Skagit County is the lead agency for SEPA.

On July 10, 2017, Skagit County issued the Final Environmental Impact Statement (EIS) in accordance with the SEPA process. As noted in the Final SEPA EIS: “no new significant impacts have been identified” and “seven days following publication of the Final EIS, permits for the Proposed Action may be issued based on the regulatory requirements for each permit process.”

Ecology concludes that the applicant has adequately demonstrated compliance with SEPA requirements.

## **8. PUBLIC INVOLVEMENT**

This PSD permitting action is subject to a minimum 30-day public comment period under WAC 173-400-740. A newspaper public notice announcing the public comment period was published in the Skagit Valley Herald on March 27, 2017. In accordance with WAC 173-400-740(2)(a), application materials and was made available for public inspection at:

Northwest Clean Air Agency  
1600 South Second Street  
Mount Vernon, WA 98273-5202  
(360) 428-1617

Washington State Department of Ecology  
Air Quality Program  
300 Desmond Drive SE  
Lacey, WA 98503  
(360) 407-6800

A public hearing on the proposed PSD was held on April 27, 2017, at the Anacortes High School, in Anacortes, WA. Four people provided verbal comments.

The public comment period closed on April 28, 2017, at 5 PM PDT. Ecology received a total of 26 comments about the proposed permit (including the comments received during the public hearing). The comments are numbered in the order they were received. Verbal comments from the hearing are numbered from #7 through #14. The initial transcript of the verbal comments contained some errors, and was edited by NWCAA for clarity. Ecology's response to comments is provided in Appendix A of this TSD.

## **9. AGENCY CONTACT**

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## ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
µg/m <sup>3</sup>	micrograms per cubic meter
ALW	Alpine Wilderness
AQIA	Air Quality Impacts Analysis
AQRV	Air Quality Related Values
BACT	Best Available Control Technology
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CO	carbon monoxide
CO <sub>2</sub> e	carbon dioxide equivalent
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
FLAG	Federal Land Managers' Air Quality Relative Values Workgroup
FLM	Federal Land Manager
FR	Federal Register
GHG	greenhouse gas
H <sub>2</sub> SO <sub>4</sub>	sulfuric acid mist
HAPs	hazardous air pollutants
hr/yr	hours per year
kW	kilowatt
MACT	maximum achievable control technology
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOC	Notice of Construction
NO <sub>x</sub>	nitrogen oxides
NPS	National Park Service
NSR	New Source Review
PM	particulate matter
PM <sub>10</sub>	particulate matter less than 10 micrometers in diameter
PM <sub>2.5</sub>	particulate matter less than 2.5 micrometers in diameter
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTE	potential to emit

Q/d	emissions to distance
RBLC	RACT/BACT/LAER Clearinghouse
SCR	selective catalytic reduction
SEPA	State Environmental Policy Act
SER	significant emission rate
SIL	significant impact level
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
TAP	toxic air pollutant
tpy	tons per year
VOC	volatile organic compound
WAC	Washington Administrative Code

## **APPENDIX A. ECOLOGY'S RESPONSE TO COMMENTS**

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
Comment 1	<p>Hold Tesoro accountable to the highest possible extent for any damage to our airshed. I have asthma as do an increasing number of children. Use the highest, not the lowest, bar for the refinery's operation. Frequent reviews of operating permits and real teeth in penalties! We need to increase use of renewables and electric vehicles instead of obsolete and polluting ones. Plan 7 generations ahead as tribes recommend. Do not kick the problem downfield for my great grandchildren to suffer with. It may be part of our last chance to reduce warming and turn the seasons and skies back to how they were when I was a child.</p> <p><b>Ecology's Response to Comment 1:</b> Ecology's proposed PSD permit incorporated the high standards the state of Washington has adopted for this type of air source. We have required the refinery to use the Best Available Control Technology (BACT) for their project. BACT was required for greenhouse gases.</p> <p>The PSD process also requires the review of expected impacts as they relate to health-based standards. The project will control ship-loading emissions, which will reduce the health risk by converting the volatile organic compounds (VOC) to carbon dioxide and water. The NWCAA minor air permit will address emissions of air toxics per Washington Administrative Code (WAC) 173-460.</p> <p>About planning for the future, last year Ecology created a new section in the Air Quality Program named the "Climate Policy Section." This new section is implementing Ecology's Clean Air Rule that addresses greenhouse gases in the state of Washington.</p> <p>This comment did not result in a change to the permit.</p>	Faye Tompkins
Comment 2	<p>I am 100% behind the Tesoro project. Please issue the permits.</p> <p><b>Ecology's Response to Comment 2:</b> Thank you for your support of Ecology's proposed permit. If the comments submitted regarding the proposed permit does not result in a change to the permit, Ecology intends to issue the permit.</p> <p>This comment did not result in a change to the permit.</p>	Jim Duffy
Comment 3	To Whom It May Concern:	Ruth LeBrun

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>I feel compelled to comment upon the proposed "Clean Products Upgrade Project" at the Tesoro Refinery in Anacortes.</p> <p><u>YES</u> - Do install a system that captures air emissions during marine vessel loading.</p> <p><u>YES</u> - Do upgrade a production unit to help reduce the sulfur content in gasoline.</p> <p><u>NO!!</u> - Do not allow "adding aa unit" to make high-octane products that can be added too gasoline, and</p> <p><u>ABSOLUTELY NO</u> - <u>Do not allow</u> "adding a unit" to separate mixed xylenes as a separate product.</p> <p>BOTTOM LINE: We do NOT need increased marine and train traffic carrying toxic substances that risk the fragile air, water and land habitats of Fidalgo Island and Skagit County. We do not need industry that increases our risk for environmental degradation.</p> <p>Thank you for your consideration.</p> <p><b>Ecology's Response to Comment 3:</b> Tesoro included a system to collect emissions from the loading of ships in their project. Ecology addressed the emissions from this system in the permit.</p> <p>Ecology did address the upgrade to a production unit to reduce the amount of sulfur content in the gasoline. Tesoro included this upgrade in their proposed project. Ecology addressed emissions from this effort in the permit.</p> <p>Tesoro includes adding a unit to make products that can be added to gasoline to increase the octane in the gasoline they produce at the refinery. The PSD permit program does not allow Ecology to step in and change the applicant's project. The PSD program carefully reviews the proposed project to ascertain if emission will significantly impact ambient air. Ecology has analyzed this part of the project and included permit requirements that is protective of the environment.</p> <p>The proposed project does include adding equipment to separate xylenes. Ecology has described this part of the project in detail in Sections 1 and 2 of the Technical Support Document (TSD). The air</p>	



Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>emissions have been addressed in the permit and are protective of the environment.</p> <p>This comment did not result in a change in the permit.</p>	
Comment 4	<p>Our primary interest is to request that Ecology review the Anacortes refinery in the next round of regional haze planning.</p> <p><b>Ecology's Response to Comment 4:</b> Regional haze planning is beyond the scope of this PSD permit action. Ecology is in the process of planning for Regional Haze 2021. Ecology has already been in contact with the National Park Service (NPS) regarding this effort.</p> <p>This comment did not result in a change to the permit.</p>	Don Shepherd, National Park Service, Air Resources Division Lakewood, CO
Comment 5	<p>Tesoro Refining &amp; Marketing Company LLC (Tesoro) is proposing a Clean Products Upgrade Project (CPUP) which would be a major modification at the Anacortes Refinery in Washington. The facility is located 76 km from North Cascades National Park (NP), 77 km from Olympic NP, and 176 km from Mt. Rainier NP, all Class I areas administered by the National Park Service (NPS).</p> <p>The value of clean air in these national parks is reflected in the laws establishing the parks and visitor values illustrated by surveys. The enabling legislation for North Cascades NP establishes the park "to preserve for the benefit, use, and inspiration of present and future generations certain majestic mountain scenery, snowfields, glaciers, alpine meadows, and other unique natural features in the North Cascade Mountains of the State of Washington."<sup>1</sup> In the 2015 Mt. Rainier NP Foundation Document, clean air, scenic vistas, and viewsheds are identified as "fundamental values." The Foundation recognizes "...unimpaired clean air allows for enjoyment of the park's spectacular views and supports healthy ecosystems. Majestic mountain scenery and spectacular vistas are abundant within and outside the park. The visual landscape and its components provide a look and feel that is relatively unchanged from the park's early years and contribute to an emotional connection for visitors along with the timelessness of Mount Rainier as a traditional national park."<sup>2</sup> In a survey conducted at Olympic NP in 2000, visitors ranked scenic views as one of the most important park resources to protect.<sup>3</sup></p>	Susan M. Johnson, Chief, Policy, Planning, and Permit Review Branch, United States Department of the Interior, National Park Service, Air Resources Division Denver, CO

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>The proposed CPUP is a major modification for particulate matter less than or equal to 10 microns in diameter (PM10) and particulate matter less than or equal to 2.5 microns in diameter (PM2.5) due to a 21.6 ton-per-year (tpy) increase in these pollutants, as well as a 347,644 tpy increase in greenhouse gases (GHG). The CPUP also includes several minor modifications emitting other criteria pollutants. The proposed modifications include a new steam boiler, a Marine Vapor Emission Control system, an expansion of the Naphtha Hydrotreater and an Aromatics Recovery Unit. The project expands the ability of the Anacortes refinery to deliver cleaner local transportation fuels and global feedstocks for polyester production but does not increase the refinery's capacity to process crude or change the crude slate processed.</p> <p>We reviewed Tesoro's April 2016 permit application and associated draft permits from the Washington Department of Ecology and the Northwest Clean Air Agency. We recognize that the Tesoro modification is major for PM 10 and GHG, and that Tesoro has employed effective controls to minimize the emissions from the modification. We commend Tesoro for the addition of Selective Catalytic Reduction (SCR) on the new boiler which minimized the NOx increase at the facility. Tesoro also proposes to collect and combust the displaced vapors from loading marine vessels along with natural gas introduced at the dock safety unit to keep the gas within safe ranges. This project reduces volatile organic compound (VOC) emissions from the facility by over 300 tpy. We appreciate the addition of controls for VOC on the marine loading facility and the reduction in VOC is significant.</p> <p><b>Ecology's Response to Comment 5:</b> The PSD permit review includes an analysis of the proposed project's effect on Class I areas. The class I analysis for this project is discussed in Section 5.4 of the TSD. In addition, the PSD permit does include requirements to address the emissions resulting from the project.</p> <p>This comment did not result in a change in the permit.</p>	
Comment 6	<p><b>NPS Analysis of Impacts on Air Quality Related Values</b> We understand that, for this modification, the only PSD-applicable pollutants are particulate and GHG. The following modeling was done based on the current pre-modification (2014 - 2015) annual emissions from the entire facility. <u>The visibility comments provided here do not apply to the currently-proposed modification.</u> In our review of the</p>	Susan M. Johnson, Chief, Policy, Planning, and Permit Review

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>Tesoro Anacortes refinery, our primary concerns are visibility and nitrogen deposition impacts at North Cascades NP and Olympic NP based on current emissions from the entire facility. We modeled pre-modification 2014 - 2015 average annual emissions from the facility (as described below) to estimate these current impacts.</p> <p><b>CALPUFF Model</b></p> <p>The NPS air quality impact analysis applied the EPA CALPUFF 5.8 suite of models. (CALPUFF version 5.8 Level 070623, CALMET Level 070623, POSTUTIL Level 070623, and CALPOST Version 6.221.) The modeling was performed in the regulatory mode with the switch MREG 1. The pollutants modeled for both the existing emissions scenario (2014A-annual) and (2015-annual) were SO<sub>2</sub>, SO<sub>4</sub>, NO, elemental carbon, organic carbon, and PM<sub>2.5</sub>; in pounds per hour units. The stack parameters and locations, the CALMET data, and the Class I discrete receptors were all from the major modification modeling analysis Tesoro submitted to the State of Washington's Department of Ecology.</p> <p>The three years (2003 - 2005) of CALMET used 12 months of MM5 prognostic data, NWS upper air data, and NWS surface stations. The model domain consists of 115 four-kilometer east-west grid cells and 105 north-south four-kilometer grid cells with ten vertical layers. The hourly ozone data used in the modeling were from 38 ozone monitors. These monitors were located in the three national parks being analyzed, 14 ozone monitors sites in Washington, 9 ozone monitors from sites located in Oregon, 4 ozone monitor sites in Idaho, and 7 ozone monitor sites located in British Columbia, Canada. The monthly ammonia (NH<sub>3</sub>) background data of 17 ppb) was from a monitoring study conducted in the Frazer Valley, British Columbia, Canada approximately 10 kilometers north of the US-Canada boundary. This historical and conservative ammonia monitoring data has been applied by Washington for many years.</p> <p>The Anacortes refinery consists of 62 different stacks and sources. Many of the stacks only emit small amounts of air pollutants. Therefore, the NPS air quality impact analysis focused on only the large emitting stacks/sources. NPS grouped the emission points into 7 groups. Group 1: Crude heaters and CGS heaters; Group 2: Vacuum flash heater, Catalytic Cracker heaters, DIIT heater, and CFH heater; Group 3: Main Boiler; Group 4: NHT heaters; Group 5: Catalytic Reform heaters; Group 6: CCU Boilers; and Group 7: Small engines and points without stacks. The VOC-only sources were not modeled.</p>	<p>Branch, United States Department of the Interior, National Park Service, Air Resources Division Denver, CO</p>

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>The CALPU FF outputs from the 7-stack scenario were run through the post processor POSTUTIL for both visibility and acid deposition in separate runs. In the POSTUTIL visibility run, the option switch MNITRATE, which recomputes the HN03/N03 partition, was set = 1 so as not to overestimate the formation of particulate nitrate.</p> <p>The visibility impacts were modeled with CALPOST version 6.22 1 following the methodology found in the Federal Land Managers' Air Quality Related Values Work Group 2010 Phase I Report-Revised (2010 FLAG)<sup>4</sup> using Method 8, Mode 5. This Method incorporates background extinction coefficients which are computed from monthly concentrations representative of North Cascades, Olympic, and Mount Rainier NPs for ammonium sulfate (BKS04), ammonium nitrate (BKN03), coarse particulates (BKPMC), organic carbon (BKOC), soil (BKSOIL), elemental carbon (BKEC) and sea salt (BKSJ\LT). Monthly Relative Humidity Adjustment Factors for small and large S04 and NO3 and sea salt specific to North Cascades, Olympic, and Mount Rainier NPs from FLAG are also applied.</p> <p>The visible haze impacts for the present and future emissions scenarios for the 7-stack configuration impacts for North Cascades, Olympic and Mount Rainier NPs are found below. According to the 2010 FLAG, "[i]f this analysis indicates that the 98th percentile values for change in light extinction are equal to or greater than 5% [0.5 deciview] for any year, then the Agencies will further scrutinize the applicant's proposal."</p> <p>The nitrogen and sulfur deposition impact analyses used the POSTUTIL program which combines both the wet and dry deposition concentrations of the five species modeled (S02, S04, NOx, HNO3, and N03) to produce a deposition of both total sulfur and total nitrogen. Nitrogen and sulfur deposition impacts for the present and future emissions scenarios for the 7-stack Configuration impacts for North Cascades, Olympic and Mount Rainier NPs are discussed below.</p> <p>Modeled Impacts from Tesoro (Please see Appendix A for additional details.)</p>	

Comment #	Appendix A. Ecology's Response to Comments Comment or Question											Comment from:
	Class I Area	Average 98th % Delta Deciview	Average Number of days with Delta-Deciview => 0.5	% of Modeled Extinction by Species						Deposition		
				% SO4	% NO3	% OC	% EC	% PMC	% PMF	% NO2	kg/ha/yr	
											S	N
	OLYM	1.691	61.7	13.1	76.9	3.7	0.0	1.1	1.9	3.3	0.003	0.014
	NOCA	0.749	32.0	13.5	74.8	3.5	0.0	1.6	2.6	4.0	0.005	0.078
	MORA	0.142	0.0	16.0	76.3	3.8	0.0	0.7	2.3	1.0	0.000	0.001
	<p><u>Olympic National Park</u></p> <p>At Olympic NP, our modeling of annual average emissions predicted that the highest 98th percentile 24-hour visibility impact of 1.917 dv occurred with the 2003 meteorological data<sup>5</sup>; the 2003 through 2005 average of the 98th percentile values was 1.691 deciview (dv), and Tesoro's emissions caused visibility impairment each year. All three years modeled showed at least 53 days with impacts greater than 0.5 dv, with an average of 61.7 days per year. Nitrate was always the dominant species impairing visibility. Nitrogen deposition exceeded our Deposition Analysis Threshold (DAT)<sup>6</sup> each year 2003 through 2005, peaking at 0.016 kg/ha/yr based on 2003 meteorology; the average was 0.014 kg/ha/yr.</p> <p><u>North Cascades National Park</u></p> <p>At North Cascades NP, our modeling of annual average emissions predicted that the highest 98th percentile 24-hour visibility impact of 0.779 dv occurred with the 2005 meteorological data<sup>7</sup>; the 2003 through 2005 average of the 98th percentile values was 0.749 dv, and Tesoro's emissions caused or contributed to visibility impairment each year. All three years modeled showed at least 28 days with impacts greater than 0.5 dv, with an average of 32 days per year. Nitrate was always the dominant species impairing visibility. Nitrogen deposition exceeded our DAT each year 2003 through 2005, peaking at 0.192 kg/ha/yr based on 2003 and 2004 meteorology; the average was 0.0781 kg/ha/yr.</p> <p><u>Mount Rainier National Park</u></p> <p>At Mount Rainier NP, our modeling of annual average emissions predicted that the highest 98th percentile visibility impact of 0.179 dv occurred with the 2003 meteorological data<sup>8</sup>; the 2003 through 2005 average of the 98th percentile values was 0.142 dv, and Tesoro's emissions did not cause or contribute to visibility impairment any year. All three years modeled showed no impacts greater than 0.5 dv. Nitrate</p>											

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>was always the dominant species impairing visibility, but less so than at Olympic or North Cascades. Nitrogen deposition did not exceed our DAT in any year, peaking at 0.0018 kg/ha/yr based on 2005 meteorology; the average was 0.0012 kg/ha/yr.</p> <p>We understand that, for this modification, the only PSD-applicable pollutants are particulate and GHG. The above modeling was done based on the current (2014 - 2015) annual emissions from the entire facility. The visibility comments provided here do not apply to the currently-proposed modification. However, given the significant visibility impacts of the entire Tesoro facility on North Cascades and Olympic NPs, we request that the Tesoro refinery should be considered for additional controls during the next Reasonable Progress phase of the Regional Haze Rule. The most significant contributor to the visibility impacts is NO<sub>x</sub>. For this reason we would also like to commend Tesoro and the Northwest Clean Air Agency on the addition of SCR on the new boiler and the permit limit of 9 ppmdv (corrected to 3% O<sub>2</sub>).</p> <p>Thank you again for providing the permit for comment. We look forward to working with both Washington Department of Ecology and Tesoro on future Reasonable Progress activities.</p> <p><sup>1</sup> Act of Oct. 2, 1968, Pub. L. No. 90-544, §101.  <sup>2</sup> National Park Service, 2015. Foundation Document: Mount Ranier National Park, Washington.  <sup>3</sup> Kulesza, C., Y. Le, and S.J. Hollenhorst. 2013. National Park Service Visitor Perceptions &amp; Values of Clean Air, Scenic Views, &amp; Dark Night Skies; 1988-2011. Natural Resource Report NPS/NRSS/ARD/NRR-2013/632. National Park Service, Ft. Collins, Colorado.  <sup>4</sup> 2010 FLAG, p. 23. See <a href="http://www.nature.nps.gov/air/Pubs/pdf/flag/FLAG_2010.pdf">http://www.nature.nps.gov/air/Pubs/pdf/flag/FLAG_2010.pdf</a>.  <sup>5</sup> NPS modeled the 98th percentile values for 24-hour visibility impact using meteorological data from 2003-2005.  <sup>6</sup> 2010 FLAG p. 66. "A DAT is defined as the additional amount of nitrogen or sulfur deposition within an FLM area, below which estimated impacts from a proposed new or modified source are considered negligible." Exceedance of a DAT increases concern about potential adverse effects of deposition on ecological resources.  <sup>7</sup> NPS modeled the 98th percentile values for 24-hour visibility impact using meteorological data from 2003 - 2005.</p>	

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p><sup>8</sup> NPS modeled the 98th percentile values for 24-hour visibility impact using meteorological data from 2003 - 2005.</p> <p><b>Ecology's Response to Comment 6:</b> As noted above in this comment, the NPS stated that "The visibility comments provided here do not apply to the currently-proposed modification."</p> <p>Please note that the TSD discussed visibility in Section 5.4.2 of the TSD. As stated in the TSD, "because Q/D is less than 10 for all areas in Table 27 [Class I areas], additional Class I AQRV impact analyses are not required."</p> <p>This comment did not result in a change to the permit.</p>	
Comment 7	<p>I live in Anacortes. I've lived here about 20 years. And I'm completely opposed to this permit. I've experienced the smells from the refineries; I know that the refineries are in the top ten of air polluters in our state, the whole state. They have, the company, Tesoro, has had a horrible safety record since they started operating the refinery that was built by another oil company. They had a horrible accident not too many years ago. We all remember it if you live here. Seven people died. The explosion just about knocked me out of bed and I live in Old Town. They were fined heavily. They were cited by the Department of Labor and Industries. And now they want to build some kind of equipment that's going to allow for even more toxic substance to be manufactured here on our island. I don't see the point at all. I'm not sure anybody here wants to wear xylene clothes. I don't. I know that. And just looking at the record that they've demonstrated since they've been operating the refinery, I don't think they can be trusted to operate in the safe manner. And it is incredibly toxic stuff, I looked it up on the Internet, and it's horrible stuff. And in order to contain the pollution, I mean, you already look at that whole March Point peninsula, you can imagine the pollution that's there. I was raised in Seattle when they converted an oil tank farm for use as a park. It took eight years to decontaminate it. How long is it going to take to decontaminate that peninsula? You know, we live with it every day. I'm, quite frankly, shocked that they had the nerve to ask this community to allow them to do this. And that's my opinion.</p> <p><b>Ecology's Response to Comment 7:</b></p>	Bruce Baglien (verbal comment presented at the April 27, 2017 public hearing)

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>Ecology has confirmed with NWCAA, the facility has been in compliance with the current air permits.</p> <p>The PSD process also requires the review of expected impacts as they relate to health based standards. The project will control ship-loading emissions which will reduce the health risk by converting the VOCs to carbon dioxide and water. The NWCAA minor air permit will address emissions of air toxics per Washington Administrative Code (WAC) 173-460.</p> <p>The PSD permit addresses air emissions from the proposed project, not worker safety. Accidents and conditions at the site are regulated by labor and industries.</p> <p>This comment did not result in a change to the permit.</p>	
Comment 8	<p>I'm a Bellingham resident. I'm a little bit of an interloper. I happen to be the Environmental Superintendent at a competitor. And I'm here to tell you that as a competitor I like this project for a lot of reasons. So, first of all, a pretty significant reduction in VOC emissions by adding the vapor combuster on the dock to cover the emissions from the evaporate losses from transferring to and from ships. So I like that part.</p> <p>I also like that they're going to be able to hydro treat more of the naphtha range material. By hydro-treat I mean remove the sulfur. If you get the sulfur out, you get cleaner burning gas. What that does is it allows your catalyst that's on your car to work more efficiently on NOx, CO and hydrocarbons. And it lasts longer. You probably are like me. You're going to buy gas. And if you could buy gas that was better quality that emitted less, you'd probably prefer that. I do. So beyond that, if you go to the isomerization component of the project, that's the best thing you can do for gasoline. My company did this in 2004, and I think it's a good thing for Tesoro to do here. You can get benzene emission reductions by saturating the benzene. You can get octane boost by, that will help your car's performance, and you can also get better control over the vapor pressure to lower the evaporative emissions from fuel transfers and use and storage.</p> <p>There's a bunch of things that I like about this on the environmental side. On the economic side, there's a couple of things I like about this that should be encouraging for the residents and the county. If Tesoro's going to spend this much money to invest in a major capital</p>	Steve Mrazek (verbal comment presented at the April 27, 2017 public hearing)



Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>project, that means they're serious about being a presence for the long term. If they're here for the long term that means they need to be able to adapt and stay competitive internationally, so that's a good sign. When you look past that, if you have international competitiveness you have employment stability. If you have employment stability you have a tax base that you can count on year after year to run the county. Don't lose sight of the fact that the State of Washington is the most trade-dependent state. We make a lot of stuff, not just us and Tesoro, but a lot of companies make a lot of things that are consumed worldwide. We don't use all our material here, we export a lot. So transportation, and clean transportation infrastructure, are critical to the continued success on an economic front for the whole state. Thank you for your time.</p> <p><b>Ecology's Response to Comment 8:</b> This comment provides the commenter's overview of the benefits of the project.</p> <p>This comment did not result in a change to the permit.</p>	
Comment 9	<p>I live in Bellingham. I am here with RE Sources but also representing myself and actually my grandchildren. And my request of all the regulators here is to be tough. And building on our last speaker, yes, there's some interesting economic things going on, but let's be candid here. In addition to the upgrade, and Tesoro is trying to sell this as an upgrade, they are introducing a whole new product line and a new profit center. And if they're doing 15,000 barrels of this stuff a day based on the current market prices in Asia, they may be looking at close to a billion dollars of revenue a year. Now, I don't have all the numbers, that number may be off somewhat, but you can be sure that if they're putting this much effort and money into this equipment there is an economic payback for them.</p> <p>One of the issues that I have is that Tesoro has what can be called perhaps a checkered past, in addition to the terrible accident several years ago that cost seven people their lives. They are currently under a consent decree with the EPA for \$10-million dollars for many different infractions in complying with regulations. So based on some of this past history and what's at stake for us I, again, ask the regulators to be very tough, to check the computations they have. They did a lot of computations; oh, gosh, we don't need a new permit on this pollutant, we're just fine. And those computations are complex. And there are</p>	Jane Bright (verbal comment presented at the April 27, 2017 public hearing)

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>lots of ways to game the system and I would ask you if you've checked them once, check them again.</p> <p>A couple of things that I am very concerned about, and again, this isn't a contest. Let me just read you one statement from the consent decree, it starts; whereas the compliant, the complaint alleges that Tesoro Refinery and Marketing Company violated, and continues to violate, at its Anacortes Washington Refinery the standards and performance for petroleum refineries and the national emission standards for benzene waste operations. And this goes on. And this consent decree is not just Anacortes, it's at other places as well in the Tesoro company.</p> <p>My areas of concern are several, starting with PM2.5, or what is called PM5, particulate matter that is so small it gets into our lungs, deeply into our lung tissue, and crosses into our blood stream. The health effects from this include premature death, non-fatal heart attacks, irregular heartbeat, asthma, decreased lung function, increased respiratory symptoms. And when there's spikes in these, you see an increase in the emergency room visits in local hospitals. And, as usual, the most vulnerable people are elders and small children. And we are right down the street here. This school is right down the street from that refinery.</p> <p>The other thing that is noteworthy in terms of the economic impact and benefit is that PM2.5, as well as acid rain and other things, has an ecological impact. And those include making lakes and streams acidic, changing the nutrient balance in coastal watersdepleting the nutrients in soil, damaging sensitive forest and farm crops, affecting the diversity of ecosystems. We are an agricultural and fisheries environment economy so that as well as refineries employing people, fisheries, and farms in both Whatcom and Skagit County count as well, and I would ask as you look at some of the economic issues here that that be taken into consideration.</p> <p>And one of my questions on PM2.5, and I don't know if you can answer it, is the information I have, which probably is not complete, looks at rates of emission as opposed to total tonnage. And PM2.5 has both short term and long-term effects. So one of the questions is how much total tonnage on an annual basis does PM2.5 change? And I have not been able to find that information easily.</p> <p>Another question is the monitoring. As I read it, the monitoring for stack testing is required every 20 quarters. And for any exceedances</p>	

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	<p>or malfunction, it gets reported 30 days after the fact. And I would say given Tesoro's history, given the seriousness of the health effects from PM2.5 that the monitoring should be much, much more stringent and more frequent. There's also a requirement to basically mail it in, or email it in. I think that this information should be online and accessible to the public at all times. It should be current.</p> <p>Another area of concern is greenhouse gases. In one part of the Tesoro discourse they talk about some remediation being too expensive. Again, I would say this is a brand new profit center that they're creating and too expensive for what is one of the questions.</p> <p>They're also relying on natural gas to manage greenhouse gases. And if you don't look at that cradle to grave you're missing a lot of the greenhouse gases. As we all know there are a lot of natural gas is coming to us by way of fracking. And some fracking operations are pretty good when it comes to methane escaped. Some of them are terrible, and I again, think that the entire source of natural gas that is going to be used and needs to be evaluated if we're going to take a serious look at greenhouse gases.</p> <p>Two other areas, a question about what is ammonia? By my calculations it increases 15% but I don't see any additional oversight, I don't see that if there's a current permit, it has to be on altered in any way. Again, ammonia is a very serious product to be working with, and that needs to be managed.</p> <p>And then, I can never say this, perchloroethylene. This was one of the things, one of the violations they have in the consent decree involves the benzene waste operations and the perc is used in that. So I am surprised that there aren't more monitoring and controls on perc.</p> <p>And then I know this is an air permit, but one of the serious issues, obviously is exposure of xylene for workers. They're much more apt to be hurt by xylene than the general public, frankly, and again, given the history here I don't know how we get OSHA involved, but we need to be looking not only at public health, but at worker health and at worker safety.</p> <p>And so my question for the regulators is other than more air pollution and threats to our farms and fisheries, what's in it for Washington State? Any of the proceeds, the net proceeds are going to end up in</p>	

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	<p>Texas. They're not going to end up in Washington. So we're counting on you to protect us because there's a lot at stake here. Thank you.</p> <p><b>Ecology's Response to Comment 9:</b> Ecology's proposed PSD permit incorporated the high standards the state of Washington has adopted for this type of air source. We have required the refinery to use the Best Available Control Technology (BACT) for their project. BACT was required for greenhouse gases.</p> <p>The PSD process also requires the review of expected impacts as they relate to health-based standards. The project will control ship-loading emissions, which will reduce the health risk by converting the VOCs to carbon dioxide and water.</p> <p>Accidents and conditions at the site are regulated by labor by the Washington Department of Labor and Industries. Air emissions from the proposed project are addressed in the PSD permit. The BACT analysis for PM<sub>2.5</sub> is discussed in Section 4.2 of the TSD. As noted in Table 19 of the TSD, this project will include 21.6 tons per year of PM<sub>2.5</sub>.</p> <p>Compliance monitoring is required in the permit in Section VIII. GHG emissions are discussed in Section 4.2.7.3 of the TSD.</p> <p>The other pollutants mentioned in the comment (ammonia, PERC, benzene, xylene) do not directly trigger PSD review and are not part of the proposed PSD permit. The NWCAA minor air permit will address emissions of air toxics per WAC 173-460.</p> <p>Additional impacts of the proposed project are discussed in Section 6 of the TSD.</p> <p>This comment did not result in a change to the permit.</p>	
Comment 10	<p>We have roughly 20,000 supporters in the northwest Washington region. Our mission is to, well, we engage in public education and advocacy that will protect the health and ecosystems of the area. And generally I just like to serve as a watchdog and check on these sort of processes and operations of the refinery. And I'd like to thank the Northwest Clean Air Agency and Department of Ecology for holding this hearing and making this publicly accessible.</p>	<p>Edward Ury, Resources for Sustainable Communities, Bellingham, WA (verbal comment presented at the April 27,</p>

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	<p>So, you know, why are we, what are we looking at here. I guess I'll also preface by, you know, before getting to my comments about the air permits, that we are, of course, submitting comments on the direct environment impact statement.</p> <p>And, you know, as my friend over here Steve Mrazek said there is a lot to like about this project. We do like to see that this marine vapor control system would reduce volatile organic compounds. I do, of course, like to see the upgrades to have a cleaner burning fuels with lower sulfur content, to be in line of course, with the EPA Tier 3 standards.</p> <p>One of the main points of our comments on the draft EIS, is that what we're looking at here is an aggregation of different projects that are actually not all together necessary in that you don't have to do all of the components to do some of them. Granted they are tied together in certain ways. What we are hoping to see in the final EIS, is an alternative which has the clean products upgrades components, not the hydrotreater, the MVEC, but not, most likely not the ARU, not the components to, that are there for the purpose of processing, extracting mixed xylenes and exporting overseas, which of course, leads to major increases in impacts whereas some of the other components reduce impacts. I'd like to see an alternative on the table for permitting agencies to consider to permit the projects that reduce impacts and not the ones that increase air pollution, water pollution, more vessel traffic, and all the risks that come with that. So there may be a stage in the process where, you know, if that is an alternative being considered in the final that may effect in terms of the PSD permit, but probably not in a way that would, you know, it would – if you're going to permit it as is now there would be no reason not to with a lower impact, right?</p> <p><b>Ecology's Response to Comment 10:</b> This hearing was for Ecology's proposed PSD permit for Tesoro's Clean Products Upgrade Project (CPUP). Ecology is only responding to comments on the proposed PSD permit.</p> <p>Tesoro includes adding a unit to make products that can be added to gasoline to increase the octane in the gasoline they produce at the refinery. The PSD permit program does not allow Ecology to step in and change the applicant's project. The PSD program carefully reviews the proposed project to ascertain if emission will significantly impact ambient air. Ecology has analyzed this part of the project and included permit requirements that is protective of the environment.</p>	2017 public hearing)

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	This comment did not result in a change to the permit.	
Comment 11	<p>So I was reading through the technical support document for the PSD permit and one thing really stood out to me, and all the more so given that, you know, I guess the reason we thought this was the clean products upgrade in large part is that it's a lower sulfur dioxide emissions coming out of our automotive vehicles, right? And yet this project, according to the TSD says that and into the draft EIS would result in a net tripling of sulfur dioxide concentrations in the Tesoro facilities in the sights of measurement for the model. So projected estimated emissions for sulfur dioxide as well as nitrogen oxides could be actually be above the significant emission rate. If the onsite emissions are accounted for, including the extra emissions coming from reformat vessel unloading extra added vessel traffic coming from the xylene component of the project. So the proposed project increases for sulfur dioxide is 39.3 tons per year. That's just shy of the significant emission rate of 40 tons per year. But the vessel shipment's emissions are shown at 0.9 tons per year sulfur dioxide, just from unloading, and that's not including, of course, the passages through the Salish Sea which I think is about four tons a year, and not accounting for, of course, is the transpacific trip in which some massive quantities of air pollutants are emitted by these large transocean vessels.</p> <p>So just if you add 0.9 plus 39.3, that's 40.2, that's above the significant emission rate. And I may be mistaken, and maybe I'm hoping folks from the agencies or Tesoro can clarify this for me, and that it looked to me, from the math, like the vessel emissions were not being included as the total project emissions increases. And I think that you might argue that if you did include them right, the background, the baseline level, would be slightly higher.</p> <p><b>Ecology's Response to Comment 11:</b> When determining PSD applicability, only stationary air sources of emissions are included. Unloading activities at a facility are secondary sources.</p> <p>The following excerpts from the Tesoro PSD application prepared by Barr describe the MVEC:</p> <p>"Displaced vapors associated with new refinery loading activities of mixed xylenes product, in addition to vapors from existing gasoline-range materials and crude oil loading operations, will be routed to a</p>	Edward Ury, Resources for Sustainable Communities, Bellingham, WA (verbal comment presented at the April 27, 2017 public hearing)

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	<p>new MVEC System to control hydrocarbons emissions, which are regulated as VOCs. The displaced marine vessel vapors will be collected by vapor hoses and routed to a Dock Safety Unit (DSU) that will be stationed on the wharf structure. The DSU is an essential piece of the overall MVEC System to ensure the safety for the ships, vessels and the overall MVEC System. Included in those safety requirements is a new 3" natural gas supply line to the DSU to supply enrichment gas for non-inerted vessels, supplied via an existing natural gas source from within the refinery. The vapors exiting the DSU will be routed through an existing line available on the wharf/causeway structure, to the new Vapor Combustion Unit (VCU) located in the refinery. Natural gas will also be added as support gas to assist combustion in the VCU during loading of inerted vessels."</p> <p>As explained in the response to Comment 24, projected emissions for SO<sub>2</sub> and NO<sub>x</sub> are not above significant emission increases rates that trigger PSD.</p> <p>The State Environmental Protection Act (SEPA) review, which may include an Environmental Impact Statement (EIS), does include other sources that are not included when determining PSD applicability for a pollutant.</p> <p>This comment did not result in a change to the permit.</p>	
Comment 12	<p>And moreover, we see the toxic air pollutant modeling results show that sulfur dioxide would also be very close to the acceptable source impact level, looking at 570 micrograms per cubic meter. The limit would be 660 for one-hour averaging periods. And according to the Northwest Clean Air Agency modeling in the draft EIS it also shows that the sulfur dioxide emissions are very, very close; 190 micrograms per cubic meter, that's a tripling upfront, 58 at the background, which is very, very close to the ambient air quality standard significant impact level of 196. Six micrograms per cubic meter, that's pretty close, so maybe if there's a slight error there, especially if you factor in the themes coming off. Just looking at the one-hour averaging periods right before things disperse, but for better or worse, like what that would do is it would put you over the SIL. And, of course, that might mean you're in violation of regional haze requirements. You would also be required to perform some soil and water deposition analyses, probably for both sulfur dioxide and for nitrous oxides. So just something that stood out to me, and I'm just kind of a layman reading through these things, but I'm hoping to see that maybe that can get</p>	Edward Ury, Resources for Sustainable Communities, Bellingham, WA (verbal comment presented at the April 27, 2017 public hearing)

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	<p>addressed someone can answer this question after this hearing, but I will be submitting that in our comments.</p> <p><b>Ecology's Response to Comment 12:</b> This project did not trigger Tier 2 health risk analysis.</p> <p>The applicant performed modeling as part of the application. The modeling results demonstrated that the National Ambient Air Quality Standards (NAAQS) would not be exceeded, the amount of increment consumed was acceptable for the PSD program, and the Class I areas were not significantly affected per the PSD requirements and the Federal Land Managers Work Group (FLAG 2010) guidance for particulate matter (PM).</p> <p>This comment did not result in a change to the permit.</p>	
Comment 13	<p>And, of course, we want to look at cumulative impacts as much as possible when you look at these things and consider what are these other things going on in the background actually influence, you know, the background concentrations of air pollutants.</p> <p><b>Ecology's Response to Comment 13:</b> The PSD reviewed impacts of the proposed CPUP, and found the proposed project was below the Class I and Class II SILs for PM<sub>10</sub> and PM<sub>2.5</sub>.</p> <p>Specifically, as discussed in Section 5.4.2 of the TSD: "Because Q/D is less than 10 for all areas in Table 27, additional Class I AQRV impact analyses [deposition analysis] are not required. ...., because project impacts are not greater than the SILs, a full impact analysis (taking into account other increment consuming sources) is not required to demonstrate compliance with NAAQS and Class II PSD increments. NAAQS compliance is assumed and compliance with WAAQS is assumed by compliance with NAAQS."</p> <p>This comment did not result in a change to the permit.</p>	Edward Ury, Resources for Sustainable Communities, Bellingham, WA (verbal comment presented at the April 27, 2017 public hearing)
Comment 14	<p>And, of course, we are looking at a project that's within range of several class one areas, national parks, scenic areas, wilderness, national monuments, San Juan's. Granted, it's deemed to be below the required limits. It seems permissible, but we really want to look at these things carefully.</p>	Edward Ury, Resources for Sustainable Communities, Bellingham, WA (verbal



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	<p>Granted, the status quo pollution from the refinery does bring with it health impacts, visibility impacts, ecological impacts that we do deal with, you know, as a status quo in this part of the part of the state home to these four refineries. And so we're hoping, right, when we're doing these operations, right, they were always striving to do better, that we're improving, you know, we do want to keep the refineries here, we want to hold them to the highest standards, right? We want the highest standards for pollution control, we want the cleanest products we can make. And we want workers to be well compensated and be safe in the workplace. We know over the years that our friends in the United Steelworkers and Refinery Workers, Local 12591, they told me a lot of concerns they have with operations here. The, you know, certain hiring practices, you know, and we think we can be striving to be safer, and we're actually, my organization has a seat at the table right now in a process working with the unions pushing further the Washington State Department of Labor and Industry to improve its process safety management standards, modelling after some new standards that we've seen implemented in California. And, granted, this is a long process that's continuing, but of course, we do know what's at stake when things go wrong, of course, the horrific accident of 2010. We want to make sure that accidents don't happen, that leaks don't happen, and keep it in the pipes, right? And so, you know, given these highly volatile products that Tesoro is proposing to produce, compounded by, you know, the recent clean air act violation and the settlement agreement, and a general lack of information as to whether or not the chemical safety board's recommendations to implement the process safety culture, continuous improvement program has been successful. That's uncertain. We believe that the agencies here, Ecology and Northwest Clean Air should, through this permitting process, as much as possible ensure the prevention of any random emissions of the process other than stack emissions, ensure that all piping is sampled to prevent any random emissions that can impact worker safety and provide more focus on air emissions by requiring independent monitoring of process safety. So I hope to work some more things out and to be submitting comments in writing, but overall yeah, it may, depending on some things, it may be necessary to rework some parts of this permit before going ahead with it. So thanks again, and good evening.</p> <p><b>Ecology's Response to Comment 14:</b> The PSD reviewed impacts of the proposed CPUP, and found the proposed project was below the SIL. Because project impacts are not greater than the SILs, a full impact (i.e., cumulative) analysis (taking</p>	comment presented at the April 27, 2017 public hearing)

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	<p>into account other increment consuming sources) is not required to demonstrate compliance with the NAAQS and Class I PSD increments. The proposed project is considered in compliance with the NAAQS. The Q/d was also examined. The Q/d results are listed in Table 27 in Section 5.4 in the TSD.</p> <p>Accidents and conditions at the site are regulated by Washington Department of Labor and Industries. Ecology regulates the air emissions from the proposed project, and addressed those emissions in the PSD permit.</p> <p>This comment did not result in a change to the permit.</p>	
Comment 15	<p>I strongly urge you to deny the permit to Tesoro for their proposed new xylene plant, within the urban growth area of the city of Anacortes, Washington. The care and oversights are not strong enough to allow for such a dangerous new endeavor to be implemented, no matter the temptation for profit.</p> <p>Tesoro has a record of egregious and catastrophic safety and clean air violations.</p> <p>The Northwest Clean Air Agency is not inclusive in their oversight in my opinion. For an example that I have experienced, one cannot make a complaint about smelling air pollution from the refinery when one is conducting business or visiting in Anacortes, or driving by on Highway 20, depending on which direction the wind is blowing. The NWCAA can only accept complaints from a person who is living or employed at the specific site of the pollution odor. Compounding the inadequacy of this rule is that those who live or work where the pollution bathes them can lose their sense of smell. Olfactory loss can occur as a result of exposure to toxic air pollution.</p> <p>Permitting projects to capture vapors, increase octane and remove sulfur from gasoline are likely a net positive for our environment, if one assumes that the substantially increasing green energy economy will be terminated. This is not the case, however, looking with a clear lens at the world's current economy.</p> <p>De-link the permits for the cleaning of gasoline, and the xylene plant. The sandwiching of the permit items together seems like a marketing ploy to sneak it through. The addition of ramping up new facilities for</p>	Joanna Idczak

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	<p>a new product (xylene) makes the title of the permit an oxymoron: "Prevention of Significant Deterioration Permit".</p> <p>The (widely scoped) aggregate and cumulative negative effects of permitting the xylene project is simply a gamble too risky. Allowing the risks to sensitive areas and humans defies common sense from many aspects. Immediate and severe dangers would be present as well as long term harm. Ask the people from Zhangzhou, China, where three naphtha tanks exploded at a xylene plant on April 6th, 2015. Over 600 firefighters and a unit of their army battled the conflagration for three days. People 31 miles away felt the blast. That was the second explosion in two years at that plant. Mass protests in China over the toxicity and danger of the plants forced the shelving, delay and relocation of proposals. (BBC news)</p> <p>Why would we accept it here? Are we a "sacrifice zone"? Our heroic and publicly financed firefighters, in case of explosion and fire, would be stretched thin and concentrated in one place. Examine the map. Think of the school children, often downwind. Think of the evacuations that could be required, as in China's blast zone. Who would help with timely evacuations? Who would be available to help us with another emergency call issue, if needed, while they are over there?</p> <p>There are alternatives to fossil fuel based packaging and clothing. Tesoro desires to have a xylene plant in Anacortes. It does not need to have it. We do not need to have it. We do not want it. Please deny the permit.</p> <p>Thank You,</p> <p><b>Ecology Response to Comment 15:</b></p> <p>The regulatory authority for air emissions from the Tesoro refinery is the NWCAA. Ecology is issuing a PSD permit for the CPUP. The PSD program has a careful stepped analysis that has been completed, and from that effort, this proposed permit was drafted. For odor complaints at the refinery, Ecology must refer you to the NWCAA.</p> <p>Washington Department of Labor and Industries regulates the Process Safety within the refineries.</p> <p>In regards to the proposed PSD permit, the permit requirements are protective of the environment.</p>	

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	This comment did not result in a change to the permit.	
Comment 16	<p>I have been a resident of Anacortes since 2004. I am strongly opposed to issuing permits to build a xylene production facility at the Tesoro refinery here. As the rest of the world tries to come to grips with the effects of man-made climate change it makes no sense to expand production to a highly explosive and potentially lethal product just to export it and make a profit. We can no longer allow the greed of a few people to trump the right for the many to a healthy, sustainable future.</p> <p>Any analysis of the true cost of transporting millions of gallons of explosive crude oil by rail all the way to Anacortes and then extracting the even more highly explosive xylene to make a profit in the export market is environmentally irresponsible, ridiculously expensive and exposes hundreds of thousands of people to serious harm or death.</p> <p>The true cost of this proposal to those of us that live here and breath the air is beyond comprehension.</p> <p><b>Ecology Response to Comment 16:</b></p> <p>The PSD program requires a careful stepped analysis that has been completed. The BACT analysis was completed. The PSD review was used to draft the proposed permit. The TSD discusses the process Ecology followed to develop the permit.</p> <p>The PSD process also requires the review of expected impacts as they relate to health-based standards.</p> <p>This comment did not result in a change to the permit.</p>	Tony Idczak
Comment 17	<p>I spoke at the April 27, 2017 public hearing on the air permit hearing and am submitting the following written comments.</p> <p>Thank you for the opportunity to provide written comments about the Tesoro "Clean Products Upgrade Project". I live downstream from this source of continuous air pollution and have been a public health advocate focused on reducing health hazards from toxics and pollution for 20 years. I know personally the health and financial costs of illnesses such pollution causes and appreciate the efforts and challenges of all those responsible for Tesoro's regulatory compliance.</p>	Jane Bright

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	<p><b>My ask of you</b> is to be tough, thorough and to re-examine all of the computations and assumptions presented by Tesoro and their consultants as to what thresholds are being crossed that trigger new permits before issuing a final air permit. In addition, please strengthen the monitoring and maximize all available penalties.</p> <p><b>Ecology Response to Comment 17:</b></p> <p>The PSD process is a rigorous process. Ecology has determined that Tesoro has followed the PSD process and properly determined that only three pollutants trigger PSD. Those pollutants are PM<sub>2.5</sub>, PM<sub>10</sub>, and GHG. Ecology has worked closely with NWCAA regarding monitoring requirements for this permit. Any penalties issued will be issued by NWCAA.</p> <p>The PSD process also requires the review of expected impacts as they relate to health-based standards. The project will control ship-loading emissions, which will reduce the health risk by converting the VOCs to carbon dioxide and water. The NWCAA minor air permit will address emissions of air toxics per WAC 173-460.</p> <p>This comment did not result in a change to the permit.</p>	
Comment 18	<p>I also request that you examine the \$10 million Consent Decree covering Anacortes in effect until October to see if it provides any additional tools to limit the pollution and/or increase monitoring and/or penalties for non-compliance. It is also a reminder of Tesoro's track record of non-compliance. The consent decree is available at <a href="https://www.epa.gov/sites/production/files/2016-07/documents/tesoro-cd.pdf">https://www.epa.gov/sites/production/files/2016-07/documents/tesoro-cd.pdf</a></p> <p>Your work is vitally important as what is at stake is our health, the health of our children and the health of our elders. Worker's health and safety are at stake as well.</p> <p><b>Ecology's Response to Comment 18:</b></p> <p>Ecology's air rules are specific to stationary sources. These rules were followed in developing the proposed permit. Federally enforceable permit requirements were included in the proposed permit to be protective of the environment.</p>	Jane Bright

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	<p>Consent Decrees are court actions that require activities or reductions. If construction permits are issued based on the Consent Decrees, these requirements will be incorporated into the Title V air permit.</p> <p>This comment did not result in a change to the permit.</p>	
Comment 19	<p>Why do you need to be extra vigilant on this project?</p> <p>Tesoro is selling this project as an upgrade and we welcome all pollution reductions and the reductions of sulfur in gasoline the project provides. However, Tesoro has not been forthcoming that these major modifications will also provide a new and additional profit center from a toxic substance. By producing 15,000 barrels of Xylene per day, based on Xylene's selling prices on current Asian markets, it is estimated that they could reap approximately \$1 Billion in revenue annually. Any assertions that BACT options are too costly need to be assessed within that context. It is also worth noting that the net proceeds go to Tesoro headquarters in Texas minimizing the economic benefits to Washington State, Skagit County and Anacortes. As you weigh the benefits of this project, please keep this in mind.</p> <p>Please also remember Tesoro has a track record of concern:</p> <p>The following is from the above sighted consent decree:</p> <p>“WHEREAS, the Complaint alleges that Tesoro Refining &amp; Marketing Company LLC violated and/or continues to violate at its Anacortes, Washington, refinery the Standards of Performance for Petroleum Refineries, 40 C.F.R. Part 60, Subparts A and J and the National Emission Standard for Benzene Waste Operations, 40 C.F.R. Part 61, Subpart FF (“Subpart FF”);”</p> <p>The public needs you to be vigilant and set the most protective air emission standards and highest penalties for non-compliance possible. We need the regulators to represent the citizens and protect us from those emission-caused health consequences that will result from increases of pollution in our air and ultimately in our lungs and bodies.</p> <p><b>Ecology's Response to Comment 19:</b> Ecology's role is to determine if the project proposed by an applicant is able to be permitted. If the proposed project will result in exceedances to National Ambient Air Quality Standards (NAAQS), Ecology will not issue a PSD permit. In this case, Ecology's review</p>	Jane Bright

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	<p>found that the proposed permit would result in the proposed project meeting all state and federal air requirements. The BACT analysis does include cost considerations, but the applicant's ability to pay for the permit's BACT requirements is not a primary factor when determining economic feasibility (EPA 1990 NSR Workshop Manual Section IV.D.2. (p. B.31)).</p> <p>The permit includes monitoring and reporting requirements that will ensure the permit limits are enforced.</p> <p>This comment did not result in a change in the permit.</p>	
Comment 20	<p><b>Areas of concern:</b></p> <p><b>1. Air pollution and health</b></p> <p>While SO<sub>2</sub>, NO<sub>x</sub> and VOCs all have direct and indirect health consequences, I am particularly concerned about a significant increase in PM<sub>2.5</sub>. While the EPA must set limits that work for both industry and public health, medical research has shown any exposure to PM<sub>2.5</sub> is detrimental.</p> <p>Given the increase in PM<sub>2.5</sub> tonnage from this project and the long-term exposure consequences, averaged emission rates are inadequate to protect health. Therefore, if there is any way to also cap total tonnage, that would be beneficial to the public.</p> <p>For the record, let me remind you of <b>health effects from PM<sub>2.5</sub></b> as summarized by the EPA</p> <p>Particles less than 10 micrometers pose the greatest problems, because they can get <b>deep into your lungs, and some may even get into your bloodstream.</b></p> <p>Exposure to such particles can affect both your <b>lungs and your heart</b>. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including:</p> <ul style="list-style-type: none"> <li>• <b>premature death in people with heart or lung disease</b></li> <li>• <b>nonfatal heart attacks</b></li> <li>• <b>irregular heartbeat</b></li> <li>• <b>aggravated <a href="#">asthma</a></b></li> <li>• <b>decreased lung function</b></li> </ul>	Jane Bright

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	<ul style="list-style-type: none"> <li>• <b>increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.</b></li> </ul> <p>People with heart or lung diseases, <b>children, and older adults</b> are the most likely to be affected by particle pollution exposure.</p> <p>In addition to increased medical bills from increased emergency room visits, asthma medications and other health costs, there are costs to the farming and fishing industries in Skagit County and Washington. EPA also details the effects from PM2.5 as follows:</p> <ul style="list-style-type: none"> <li>• making lakes and streams acidic</li> <li>• changing the nutrient balance in coastal waters and large river basins</li> <li>• depleting the nutrients in soil</li> <li>• damaging sensitive forests and farm crops</li> <li>• affecting the diversity of ecosystems</li> <li>• contributing to <a href="#">acid rain effects</a>.</li> </ul> <p><b>Monitoring</b> by testing once every 20 quarters is not protective or useful and a 30-day after-the-fact reporting requirement for a malfunction given the consequences is detrimental to the public. Tesoro should be required to monitor and report more often. All data should be online on the Tesoro Anacortes webpage and accessible to the public. <a href="http://tesoroanacorteseis.com/">http://tesoroanacorteseis.com/</a></p> <p>The goal and practice should be to stop any overages in real time.</p> <p>In addition, given that PM2.5 increases substantially with this project, Tesoro should be required to do a soils and receiving water bodies deposition analysis.</p> <p><b>Ecology's Response to Comment 20:</b> The PSD review requires modeling of the emissions. The modeling showed that the pollutants of concern were below the SILs. This information is discussed in the TSD in Section 5.2 for Class I areas. The modeling also included impacts to Class II areas in Section 5.4 of the TSD.</p> <p>In regards to monitoring frequencies, the permit writer considered options and found that the monitoring and reporting requirements placed in the permit would ensure the regulatory agencies have the</p>	



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	<p>knowledge and timing of violations of the permit. It will be the responsibility of the facility to return to compliance, and test to demonstrate that the facility is back in compliance.</p> <p><u>The Northwest Clean Air Agency (NWCAA) minor permit will include additional monitoring requirements for the other pollutants to insure good combustion, which will minimize PM<sub>10</sub> and PM<sub>2.5</sub> emissions.</u></p> <p>This comment did not result in a change in the permit.</p>	
Comment 21	<p><b>2. GHG</b></p> <p><b>Tesoro's</b> claim that some remediation is too expensive needs to be reviewed in light of the fact that this project results in a profitable new product. What is of most concern, however, is the reliance on natural gas to meet the GHG requirements. Given the nature of GHGs and the worldwide geographic impact, you must also consider where and how the gas is sourced and how much GHG is released in the extraction, processing and transport of the gas before it reaches Tesoro. For example, there is increasing data that methane releases vary significantly from different fracked gas sources with some operations generating significant amounts of concern. Excluding the methane and other GHGs from the source gives a distorted evaluation of the GHG compliance for this project.</p> <p><b>Ecology's Response to Comment 21:</b> The facility has the choice on which approach they will take to meet GHG requirements. In this case, the facility is using natural gas. The permit addresses the emissions involved with this approach. The PSD process only can evaluate the emissions associated with the Anacortes facility project.</p> <p>The PSD regulations are clear that they apply only to major stationary air sources. Ecology followed our regulations and discuss the PSD process in Section 2.1 in the TSD.</p> <p>This comment did not result in a change in the permit.</p>	Jane Bright
Comment 22	<p><b>3. Ammonia</b></p> <p>It appears that Ammonia will increase approximately 15% but that increase is insufficient to trigger a new permit requirement. However,</p>	Jane Bright

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>given the consequences of mishandling ammonia, I believe an audit of current practices and permit compliance and safety should also be required.</p> <p><b>4. Perchloroethylene</b></p> <p>Included in the settlement between the EPA and Tesoro is information that they violated the National Emission Standard for Benzene Waste Operations. Since it appears there will be an increase in Perchloroethylene as part of a Benzene Saturation Unit it would seem additional oversight and monitoring would be appropriate.</p> <p><b>Ecology's Response to Comment 22:</b> Ammonia and perchlorate are not PSD regulated pollutants. These pollutants are regulated by NWCAA under WAC 173-460. The NWCAA minor permit has included monitoring requirements for ammonia.</p> <p>This comment did not result in a change in the permit.</p>	
Comment 23	<p><b>5. Worker Safety</b></p> <p>As you know, Tesoro has also violated OSHA laws. Given that health effects from Xylene are most likely to effect workers, the question is what can be done pro-actively to insure practices and procedures protect those most likely to be exposed.</p> <p>I understand this is an air permit, but as representatives acting on the public's behalf, it would seem that you have an opportunity if not an obligation to raise worker safety issues with whatever authorities have jurisdiction if worker safety and health have not already been addressed.</p> <p><b>Conclusion:</b></p> <p>Thank you.</p> <p>We all appreciate the benefits of temporary construction jobs and the permanent jobs this project would create as well as the project's several environmental benefits. For those not directly employed, however, the PM increases will also increase diseases in the community and threaten our farms and fisheries, Washington residents</p>	Jane Bright

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>who pay the price at the emergency room with asthma and heart attacks are counting on you to protect us.</p> <p>We thank you for doing this tough and vital work on our behalf.</p> <p><b>Ecology's Response to Comment 23:</b> The PSD permit addresses air emissions from the proposed project, not worker safety. Accidents and conditions at the site are regulated by the Washington Department of Labor and Industries. The Washington Department of Labor and Industries regulates the Process Safety within the refineries.</p> <p>NAAQS as provided from EPA have two classes of standards: primary standards and secondary standards. "Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings."</p> <p>As described on pages 30-32 and tables 26 and 27 of the TSD: "because project impacts are not greater than the SILs, a full impact analysis (taking into account other increment consuming sources) is not required to demonstrate compliance with NAAQS and Class II PSD increments. NAAQS compliance is assumed and compliance with WAAQS is assumed by compliance with NAAQS."</p> <p>Also, emissions from this project were below the threshold to trigger a full ozone analysis.</p> <p>This comment did not result in a change in the permit.</p>	
Comment 24	<p>Thank you for accepting our comments regarding the Prevention of Significant Deterioration (PSD) permit for the Tesoro Anacortes Refinery.</p> <p><i>RE Sources for Sustainable Communities</i> (RE Sources) promotes sustainable living and protects the health of northwest Washington's people and ecosystems through the application of science, education, advocacy and action. Our vision is to see people living satisfying lives in accord with the ecosystems we depend on – generation after generation.</p>	Eddy Ury Clean Energy Program Manager RE Sources for Sustainable Communities Bellingham, WA

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>The Tesoro Anacortes Refinery "Clean Products Upgrade Project" (CPUP) raises a number of concerns for our mission. While components of the project bring clear benefits to reduce source emissions and produce lower-sulfur fuel products, the production and export of mixed xylenes will bring significant risks and impacts. The Marine Vapor Emissions Control (MVEC) has been aggregated with the Aromatics Recovery Unit (ARU), storage tanks and the Isomerization unit to offset the source impact from Volatile Organic Compounds (VOC) and other pollutants, so as to ensure net impacts stay below regulatory limits. The Naptha Hydrotreater upgrade (NHT) is necessary for Tesoro to comply with EPA's Tier 3 standards for gasoline, and has been aggregated with the expansions for xylenes production so that the project as a whole can be dubiously referred to as a "Clean Products Upgrade."</p> <p>We will be requesting in our SEPA comments that the Final EIS (FEIS) include an alternative proposal for consideration, to include the NHT and MVEC upgrade components only. Be advised that should agencies select this alternative, adjustments to content in the Prevention of Significant Deterioration (PSD) permit could be necessary. Please consider our comments below regarding the Draft PSD:</p> <p>Though the benefits of this project are deemed to produce low-sulfur fuels to comply with EPA Tier 3 standards, data in the DEIS and TSD seems to show that this project would result in a tripling of Sulfur Dioxide concentrations at Tesoro's facilities. NCAA Modeling (Draft EIS Table 4-9) shows background concentrations at 58 micrograms per cubic meter for 1-hour averaging period. The addition from the proposed project is modeled to show a Total Concentration of 190, three-fold increase. Project Estimated Emissions for sulfur dioxide (SO<sub>2</sub>) as well as nitrogen oxides (NO<sub>x</sub>) may be above the Significant Emission Rate (SER). The Proposed Project Emissions Increase for SO<sub>2</sub> is 39.3 tons per year (tpy), just shy of the 40 tpy SER. Vessel Shipments Emissions are not included in the Proposed Project Emissions, though they are modeled in the Draft EIS (Table 4-12) at 0.9 tpy SO<sub>2</sub> from unloading. Emissions from vessels at berth ("dockside") are considered primary emissions for applicability purposes, as a result of a court decision in NRDC v. EPA, 725 F.2d 761 (D.C. Circuit 1984). If onsite emissions from dockside reformat vessels unloading (as a direct operation requirement for the proposed project) are added to the projected stationary source emissions, this brings the total increases above the Significant Emissions Rate.</p>	

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	<p><b>Ecology's Response to Comment 24:</b> Ecology has found that the applicant followed appropriate PSD procedures when determining which pollutants trigger PSD, as explained in the TSD. The only pollutants that trigger PSD review for this project are GHG, PM<sub>2.5</sub>, and PM<sub>10</sub>.</p> <p>Ecology provides the following two reasons as to why SO<sub>2</sub> emissions of 0.9 tons per year from vessel unloading emissions were not added to the other SO<sub>2</sub> emissions from this project.</p> <p>First: WAC 173-400-710 specifically requires that Ecology use the definition of secondary emissions as defined in WAC 173-400-030. Secondary sources of emissions are not included when considering PSD applicability of stationary sources. Because Tesoro vessel unloading emissions are from a secondary source and not a stationary source, they do not need to be included for PSD applicability considerations.</p> <p>Second: Tesoro has provided the following information which shows that unloading activities emit only 0.004 tpy of SO<sub>2</sub> instead of 0.9 tons per year. If the 0.004 additional tpy of SO<sub>2</sub> were added to the 39.3 tpy, the total SO<sub>2</sub> from the project would still be below the 40 tpy PSD threshold, and would not trigger PSD permitting requirements. However, as stated earlier, SO<sub>2</sub> unloading emissions do not need to be added to this PSD project's total SO<sub>2</sub> emissions.</p> <p>A similar argument holds true for NO<sub>x</sub>. If the EIS estimated emissions of NO<sub>x</sub> from unloading (2.1 tpy) were added to the PSD proposed project increases (36.7 tpy), it would only sum up to 38.9 tpy, which is below the 40 tpy PSD significant emission increase trigger. However, as a secondary emission, the 2.1 tpy of unloading estimated in the EIS are not added to the stationary source total of 36.7 tpy.</p> <p>Ecology provided a clarification to the ambient impact analysis results in Tables 26 and 27 of the TSD, which include the secondary emissions from offloading of reformate.</p> <p>This comment does not result in a change to the permit.</p> <p>---As provided from Tesoro to Ecology on June 1, 2017---</p>	

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	<p>“Tesoro calculated much lower SO<sub>2</sub> emissions, based upon the fuel that is actually burned in the engines (ultra-low sulfur diesel) located on the barges.</p> <p>Emissions of SO<sub>2</sub> from vessel unloading can be estimated based upon the emission factor, expected unloading rate, and diesel engine operating rates:</p> <ul style="list-style-type: none"> <li>• The emission factor of 8.09E-03*S lb/hp-hr is from AP-42 Table 3.4-1, where S is in units of % sulfur. Ultra-low sulfur diesel contains 15 ppmw of sulfur (0.0015%). The resulting emission factor is 1.2E-05 lb/hp-hr.</li> <li>• The total volume of reformat received will be 7,200,000 bbl/yr. There are assumed to be 4 pumps on each Articulated-tug Barge (ATB) (rated at 450 hp each (1800 hp total), and the combined pumping rate is 18,000 bbl/hr. At this rate, unloading activities would occur 400 hours/year. The engines' operational rate is 720,000 hp-hr.</li> <li>• Total SO<sub>2</sub> emissions = (1.2E-05 lb/hp-hr) * (720,000 hp-hr) = 8.7 lb/yr = 0.004 tons/yr.</li> </ul> <p>Additionally, of the 60 marine vessel trips per year expressed in the Draft EIS, reformat deliveries represent about 40 trips per year (barge) with the remaining 20 representing the xylene shipments to Asia. Emissions associated with loading xylene is expressed in the PSD application under the Marine Vapor Emission Control System (MVEC).”</p> <p>---End of Tesoro clarification information----</p>	
Comment 25	<p>Moreover, Toxic Air Pollutant (TAP) Modeling (DEIS Table 4-10) results show that SO<sub>2</sub> would be close (570/660) to the acceptable source impact level (ASIL) for one hour averaging periods. NCAA Modeling (DEIS Table 4-9) shows SO<sub>2</sub> emissions very close (190/196) to the Ambient Air Quality Standards (AAQS) for one hour averaging period. A slight increase of only six micrograms per cubic meter in the Background Concentration of SO<sub>2</sub> from increased vessel traffic in the area (from direct impacts if not cumulative impacts for the CPUP) would set the Sulfur Dioxide concentration over the ASIL and the AAQS, and may be in violation of Regional Haze requirements. Tesoro should be required to perform deposition</p>	<p>Eddy Ury Clean Energy Program Manager RE Sources for Sustainable Communities Bellingham, WA</p>

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>analyses for SO<sub>2</sub> and NO<sub>x</sub> on soils and receiving water bodies within 200 km of the Tesoro Facility.</p> <p><b>Ecology's Response to Comment 25:</b> This project did not trigger Tier 2 health risk analysis.</p> <p>Also, as discussed in Section 5.4.2 of the TSD: "because Q/D is less than 10 for all areas in Table 27 [Class I areas], additional Class I AQRV impact analyses [deposition analysis] are not required."</p> <p>This comment does not result in a change to the permit.</p>	
Comment 26	<p>Tesoro is seeking permits from the Northwest Clean Air Agency that address the project's potential impacts on air quality.</p> <p>I live directly across from the refinery. When wind comes from the east, I can smell the pollutants. At night, there is a high-pitched whistle. During the height of summer, doors and windows must be shut. Environmentally, Tesoro is already discharging tons of waste water pollutants annually into Fidalgo Bay. The bay's sea food-clams and crabs- are toxic and its beaches are carcinogenic.</p> <p>I'm not opposed to the concept of Tesoro's clean products upgrade, I would like to see Tesoro clean up its act-but not at the expense environmentally and ecologically of allowing the xylene project to go forward.</p> <p>To be against the overall upgrade is like being against "the flag, mom and apple pie." That is why Tesoro so artfully crafted this as a "Clean Products Upgrade" and tied it to the xylene project.</p> <p>Tesoro is saying: "We're willing to clean up our products, if you give us the xylene in exchange." Do not allow this to be a hostage-like negotiation. Just say "NO" to xylene production.</p> <p>Tesoro's actions constitute a bait and switch to allow exporting of larger amounts of oil and refinery products overseas. If the clean air initiative results in more oil trains, it will lead to dirtier air in Anacortes and surrounding environs because of increasing diesel train pollution. Further, the idea that sending xylenes to Asia increases clean air is ridiculous. It only shifts the point of air pollution from Washington state to points west.</p>	Carol O'Hearn

Comment #	Appendix A. Ecology's Response to Comments Comment or Question	Comment from:
	<p>Tesoro experts say "the proposed action will increase marine vessel traffic by approximately 5 vessels per month." That is 60 a year. Please do the math.</p> <p>I'm outraged that Tesoro calls this "clean" products upgrade. It is the height of public relations spin and an oxymoron. Oxymoron means a combination of contradictory or incongruous words. This is heavy on the "moron." It is a p.r. effort on Tesoro's part to put a positive spin on a disaster in the making. Is the state of Washington going to be complicit in the disaster? Are humans, the fragile ecosystems and wildlife to be collateral damage? Just who does Tesoro consider the "morons"? The public for believing this!! Just Say No to the xylene production.</p> <p><b>Ecology's Response to Comment 26:</b> Ecology has reviewed the information submitted by Tesoro, and written a PSD permit that complies with the PSD permit program. The PSD permit includes federally enforceable requirements and is protective of the environment. Ecology reviewed the comments received during the public comment period to determine if the proposed PSD permit would require any changes. After review, Ecology found that the proposed PSD permit did not require any changes. Therefore, Ecology intends to issue the PSD permit once the SEPA process has been completed.</p> <p>This comment does not result in a change to the permit.</p>	